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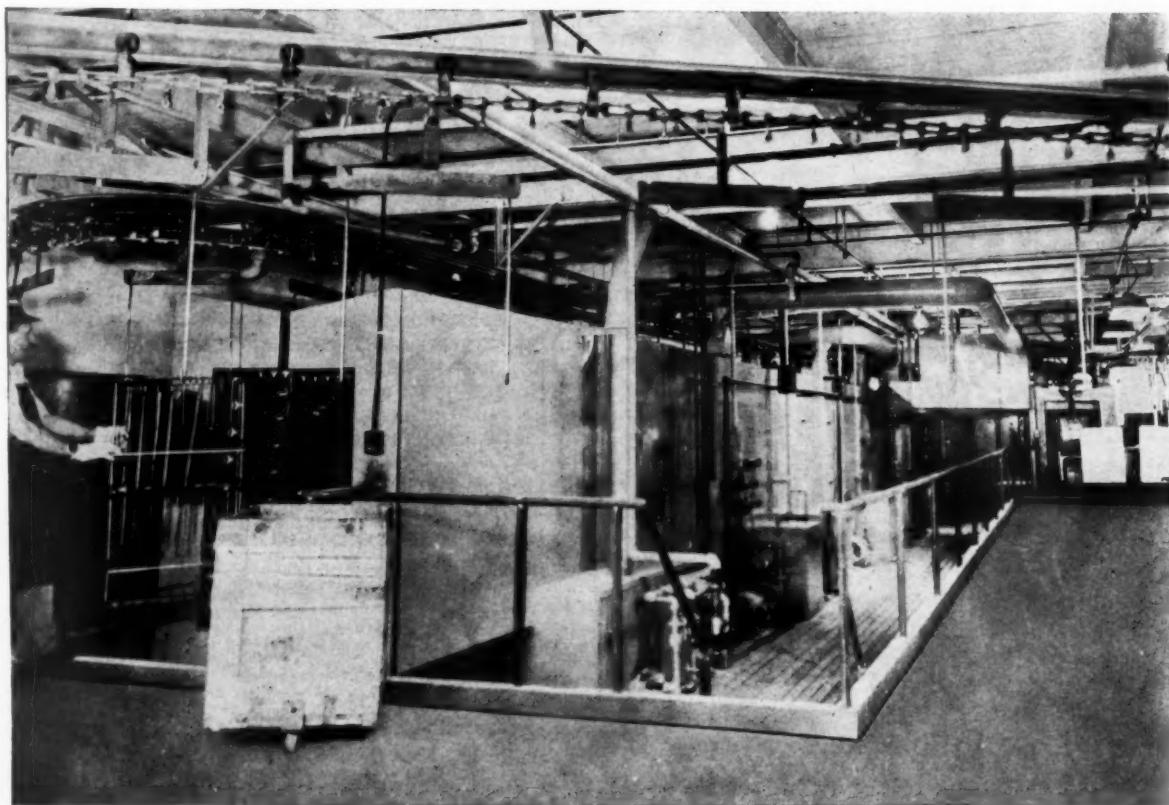
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CERAMIC FINISHES ON METAL

SPRAY PICKLING....

• • • • PRIOR TO PORCELAIN ENAMELING



A METAL WASH Spray Pickler processing ranges in the plant of a leading American manufacturer.

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PORCELAIN ENAMELING

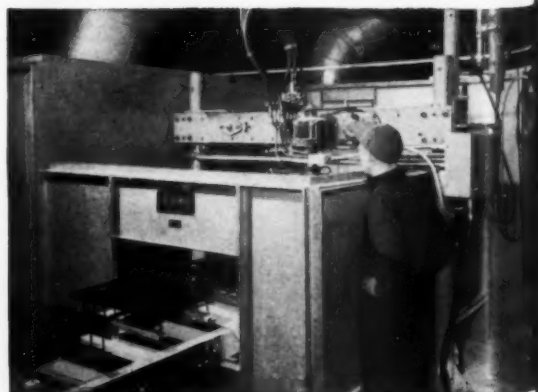
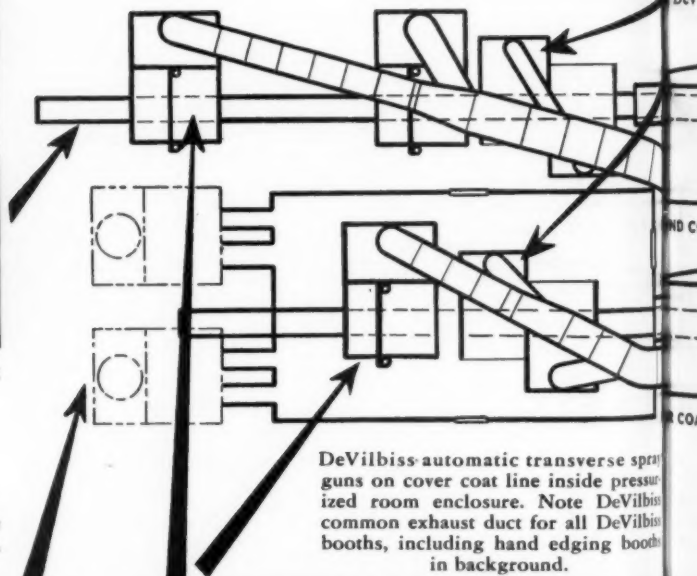
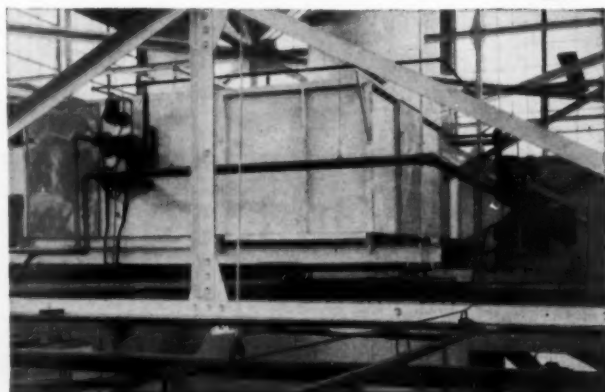
The new and highly efficient porcelain enameling department recently installed at The Floyd-Wells Company, Royersford, Pennsylvania, is a typical example of the complete and specialized engineering service rendered by DeVilbiss. This new layout is DeVilbiss designed and equipped throughout, and is one of the most modern and finest porcelain enameling plants of its kind.

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Loading stations at starting ends of both ground coat (left) and cover coat (right) conveyors.

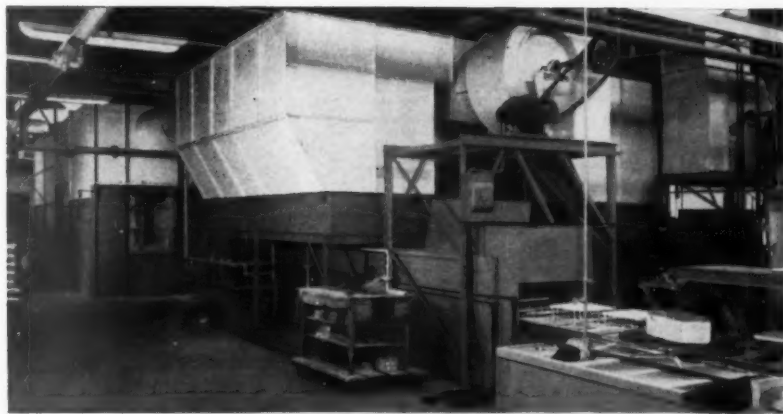
DeVilbiss air replacement units overhead supply the DeVilbiss pressurized room enclosure with heated, filtered air.



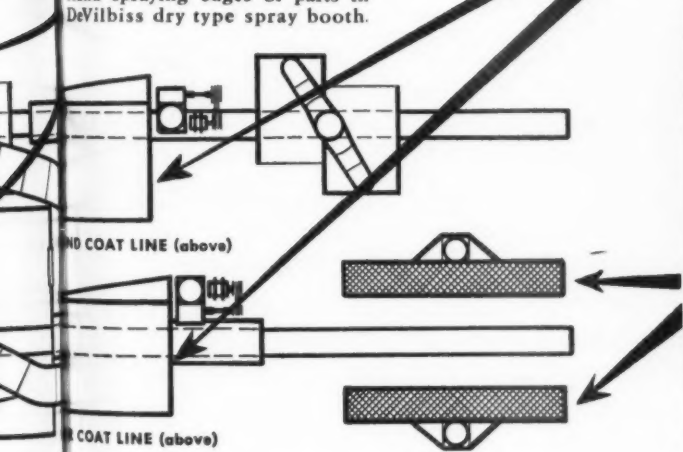
...for expertly engineered, completely coordinated SYSTEMS



Hand spraying edges of parts in DeVilbiss dry type spray booth.



Shown in center is DeVilbiss common water wash chamber for DeVilbiss cover coat booths. DeVilbiss pressurized room in background. Washer is mounted over drier to conserve floor space. Brushing tables shown in foreground.



DeVilbiss down draft brushing tables on either side of conveyor at end of cover coat line. Note belt conveyor over pin type conveyor for carrying brushed ware to furnace chain.

Your DeVilbiss engineer will gladly show you how DeVilbiss Ceramic Spray Equipment can increase production, improve product quality and lower operating costs.

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AIR COMPRESSORS
HOSE & CONNECTIONS**

*Photos courtesy of The Floyd-Wells Company,
Royersford, Penna.*



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Our Field Engineers, at central points, plus a well-staffed and equipped laboratory can render valuable cooperation on ceramic problems of all types.

For optimum results, we would recommend the use of a TAM opacifier best suited for the type of frit being used

Antimony opacified regular frits: — Treopax, Hyopax, Treopax S

Antimony opacified A. R. frits: — Opax, Treopax, Treopax S

Zirconia opacified frits: — Treopax Z, Treopax, Treopax S

TiO₂ opacified frits: — Treopax Z, Treopax

C. I. Enamels: — Opax

TAM vitreous enamel mill addition opacifiers OPAX, HYOPAX, TREOPAX, TREOPAX S and Z assure economical and uniformly excellent porcelain enamel opacification. TAM Zirconium Oxide Opacifiers increase elasticity of an enamel and reduce chipping tendency.

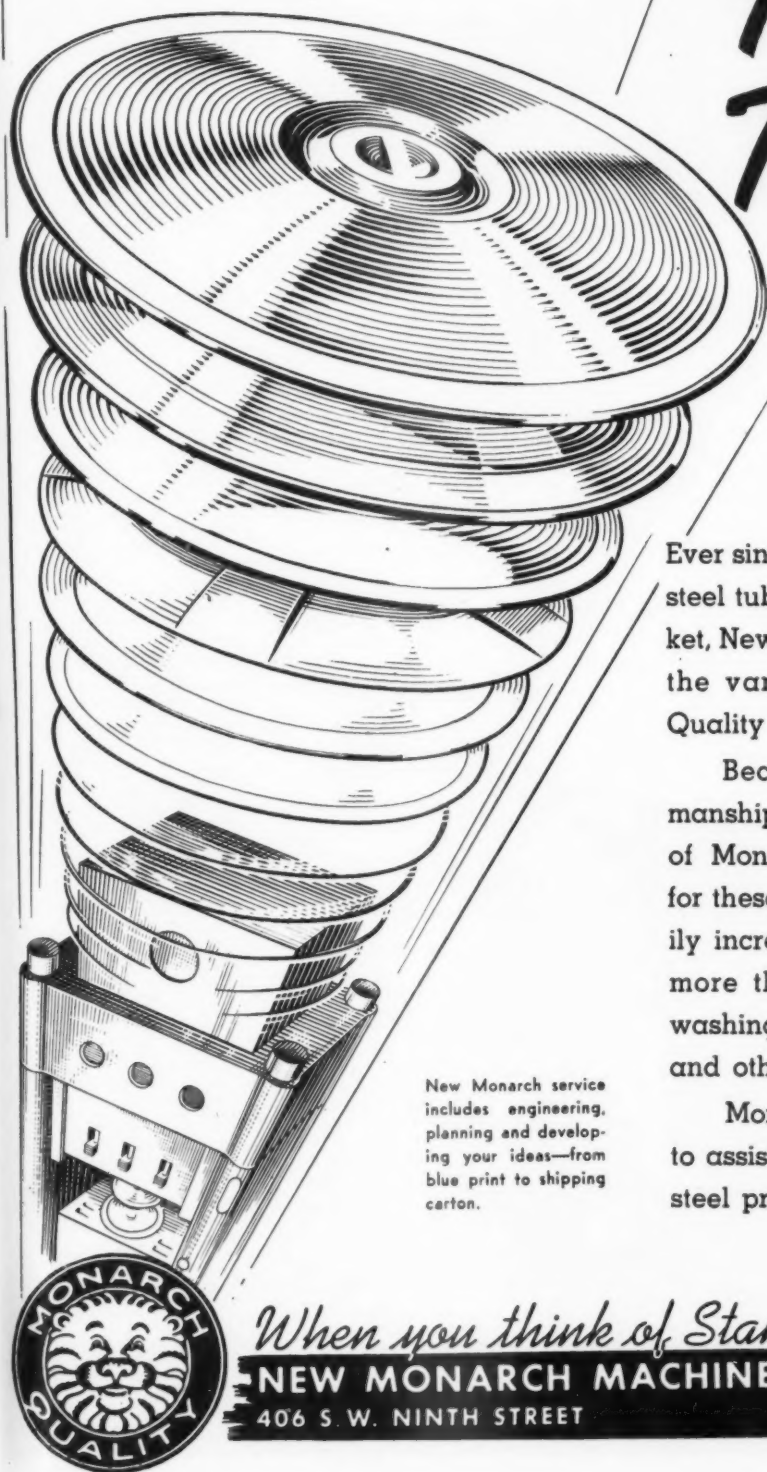
TAM

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Dipping

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- Dip Tanks
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- Magnetic Separators
- Respirators
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- Spray Booths
- Spray Supplies



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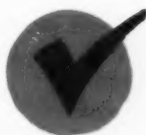
Spraying Techniques

RECENTLY ?

In view of rising costs, *how you do it* is more important today than ever before. Taking full advantage of new developments, new production techniques, new labor-saving equipment, can make a big difference in reducing operating expenses and increasing your output.

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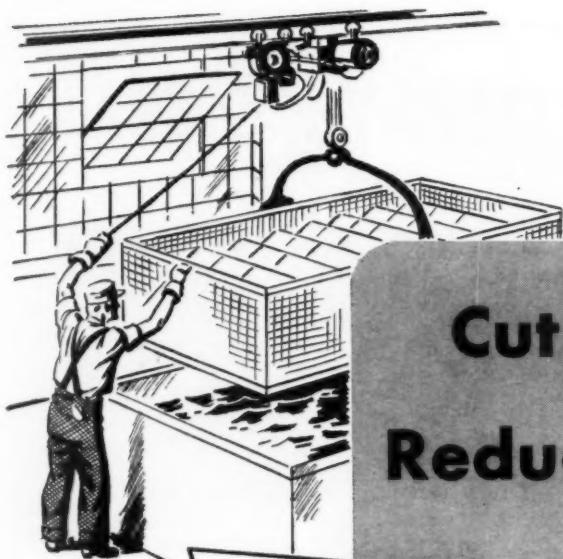
Let's talk about your Dipping and Spraying facilities and requirements! Remember, Ferro is headquarters for everything that is new in Porcelain enameling . . . including research, engineering, equipment and production supplies.



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Made right — because only tested raw materials are used, the plant equipment is of modern proved design and construction, and the men who control the production have had the years of experience required to produce consistently good enamels.

But that's not all — laboratory control of production and the finished product is constantly maintained and, most important of all, when you buy Century frit you know that every enamel, regardless of type, has been

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CENTURY VITREOUS ENAMEL COMPANY, 6641-61 S. Narragansett Ave., Chicago 38, Ill.

finish FEBRUARY • 1948

AN INSIDE STORY

of importance to
ceramic finishing men



Only the new Binks Model 18V spray gun * has these 12 PATENTED FEATURES

Here are the reasons why the new Binks Model 18V spray gun for ceramic finishing eclipses all others . . . in performance . . . economy . . . long life . . . ease of operation. Check the following advantages and see why the 18V has been acclaimed "the finest spray gun in America."

No.	DESCRIPTION	WHY IT IS BETTER
1	Perfect air seal	Stops loss of air through the retainer ring. No leakage. Every cubic inch of air is utilized. Saves money by saving air.
2	Unique side port control . . . Valve controlling atomizing air located in the head of gun but conveniently controlled from back of the gun.	Reduces drop in air pressure in the gun. Controls air at point of use.
3	Special patented fluid control	The spring is a permanent part of the control screw assuring perfect alignment. No loose parts or springs to lose.
4	Gun Body . . . of drop forged aluminum with a black electrolytic coating.	Lighter in weight, provides perfect balance, less fatigue. Easy to clean.
5	Material Nozzle . . . of hardened steel with Tungsten Carbide inserts. Tapered seat design.	Withstands the abrasion of frit better. Tapered seat self-centers the needle.
6	Needle Valve . . . floating type of hard stainless steel with Tungsten Carbide tip.	Wear resistant and corrosion-proof. Can be adjusted quickly to compensate for wear.
7	Head . . . of drop forged bronze, heavily plated.	Precision made. Forms permanent air-tight union with the body.
8	Air Nozzle . . . of drop forged bronze, heavily plated.	Machined to extremely close tolerances. Can be quickly changed for various set-ups.
9	Air Valve . . . cartridge type.	Easily replaceable as a unit. Saves time and money.
10	Trigger . . . two finger type, reinforced on back with hardened steel plate.	Comfortable and easy to operate. Less fatigue. Steel plate protects trigger from wear.
11	Air Passages . . . large throughout the gun.	The drop in air pressure in this gun is less than half that of other makes.
12	Controls for both fluid and air at back of gun.	Convenient for use. Spray patterns adjustable from round to flat and all intermediate patterns.

* Manufactured under the following and other patents: 1,910,673—2,146,416—2,249,771—2,107,727—2,107,303—2,138,300—2,101,175—2,051,210—2,049,700—2,029,423—1,990,824—1,990,823—1,897,173—2,236,551



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Best...

J. J. Roche
President

THE Finish Line

COOPERATION IS A GREAT WORD — it has had much lip service throughout industry and business for many years. There is a healthy situation in the fact that a great many companies and organizations of all types are now laying the groundwork for developing the true meaning of the word. True cooperation can mean much to individuals, companies, industry organizations, and to the nation as a whole, and we have yet to see an instance where it has been harmful to anyone.

For the individual company

If you will read between the lines of Mr. Hicks' article, "Employee Training Gets the Spotlight at the Home of the 'Quality' Range," featured in this issue of *finish*, you can readily see important benefits that may accrue from the R. & M. plan that are not always associated with sales and personnel training.

A new understanding of the problems of fellow workers must naturally follow when we learn *how* their jobs are done and the *reasons why* they are done. It is more common than not to find the salesman lacking in appreciation of the plant man's responsibilities and the service man's "grief." Then, too, the plant man quite often considers the office personnel and the sales force as so much "overhead" added to the cost of his product.

Insofar as an educational program for company organizations leads to a better understanding of the product, company policies and individual personnel problems, the result will be increased cooperation with resultant benefit to all.

The plan which Mr. Hicks describes is only one plan. It is not our thought to suggest *this plan* to others in industry, but we do suggest that if you do not already have a plan in operation it's high time you gave it some serious thought.

Intra-industry cooperation

We can all remember when any suggestion of inter-plant visits and inter-organization consultations were frowned upon by many industry heads. Today we find the great majority of business and industrial organizations eager to take advantage of this type of cooperation. It has been proved that for every good idea or techno-

logical improvement that an individual or company contributes to others in similar activity there is the opportunity to get many-fold benefits in return.

As for the porcelain enameling industry, it will reach its peak in cooperative effort only after *all* of the operating plants (*so-called captive plants included*) are a part of the industry's national organization and regular contributors of both problems and ideas that can be worked on and shared by all others within the industry structure.

This publication pledges its support to this end, for it is our sincere belief that *every* company operating an enameling plant can reap rich benefits for its plant, sales organization and for management through a small investment of cooperative effort.

The Porcelain Enamel Institute took a big step forward in establishing a classification in its membership structure to provide for the "captive" plants. While porcelain enameling represents only one part of the activity of the modern appliance manufacturing plant, it is certain that there is a no more important section of the producer's plant. This relates to the salability of the product, the investment in plant equipment and the *opportunities* for improvement in processing techniques and saving in production costs.

There can be inter-industry cooperation too

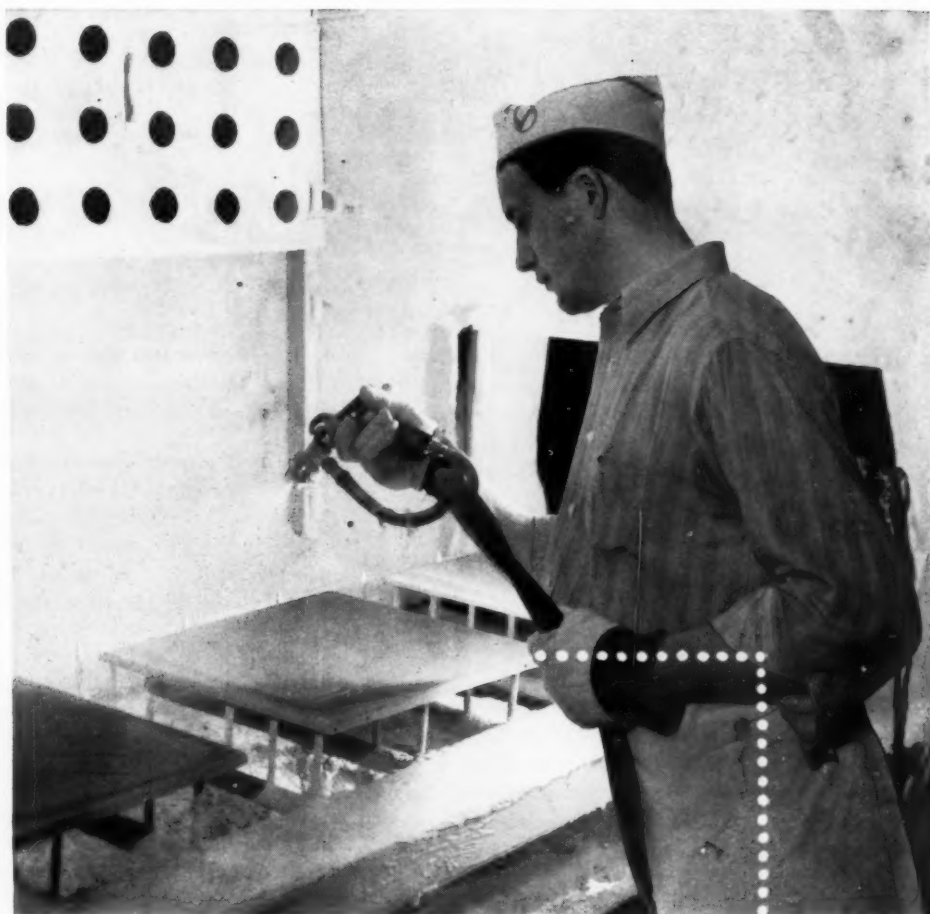
We have heard Dr. Alfred P. Haake, in recent talks before industrial associations, refer to the many advantages to be gained through individual organizations working together as a group.

But — Dr. Haake goes a step farther and suggests that if we want to retain our present high standards as a nation of free men, we should learn to work together in inter-industry activity as well.

It's quite obvious that, although the idea of inter-industry cooperation offers far less possibility for early fulfillment than intra-industry activity, there is food for thought in its ultimate possibilities.

Dana Chase

EDITOR AND PUBLISHER



Sheets That Take a "DOUBLE GRIP" on Porcelain Enamel

That's what you get when you use Inland Enameling Iron Sheets in fabricating your enameled products. A special-textured surfacing process—developed by Inland metallurgists—makes it possible for the ground coat to become *chemically fused* and *mechanically keyed* to Inland Enameling Iron Sheets. That's "double-grip" action . . . insuring double-tight adherence of enamel to base.

What's more, customers report they save time and money because the textured surface of Inland sheets permits controlled chemical fusion to take place in the shortest possible time and at the lowest possible temperature. To find out how Inland Enameling Iron Sheets may be of help to you, write for complete facts. INLAND STEEL COMPANY, 38 S. Dearborn St., Chicago 3, Ill. Offices: Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

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Employee training gets the spotlight

at the home of the "QUALITY" range

an outline of sales and supervisory training courses employed by a forty-five year old manufacturer of gas, electric, and combination ranges, and kitchen cabinets

By Robert H. Hicks • SECRETARY, ROBERTS & MANDER CORPORATION, HATBORO, PA.

Exclusive
finish

In order to gear its entire organization for increased production in 1948, and to efficiently and adequately cover its national market for kitchen appliances, Roberts & Mander Corporation last fall instituted a comprehensive training program at its Hatboro, Pennsylvania, plant. By year's end, the first of a series of three months' courses for sales employees and the first phase of its plant-wide training schedule had been completed.

The president of the company, Henry S. Minster, in addressing the first

class of young college graduates on the opening day of the Sales Training Course announced its objectives: "A thorough knowledge of our company and its policies, our products, services and markets will enable you to best serve our customers." To the employees attending the Supervisor Training Course, Mr. Minster said, "Each employee should have as wide a scope of knowledge as possible in carrying out his duties and responsibilities. No matter what your position may be, exact knowledge of what fellow employees in your own and other departments are doing will make you a more efficient, more understanding and a better employee."

All of the instruction in both courses is given at the company's Hatboro plant, except for field trips to suppliers' plants and field service and sales experience, which are afforded to sales trainees. The most modern training facilities are provided and most of the instruction is given in a large classroom which comfortably seats sixty students. Before the program was instituted, a course in "Teaching Methods" was given to department heads and staff members. Lecture and demonstration material was carefully reviewed to insure the highest level of instruction. Each instructor was required to prepare his outlines, rehearse his

Edmund F. Walker of the company's enameling department explains to the Sales Training Class one of the preparatory steps in making porcelain enamel for Quality Ranges.



presentation, and schedule the material needed in demonstrations so that they could be set up on the platform in the classroom the night before the lecture and demonstration was given. Emphasis is on demonstration, and the extent to which this is carried is well illustrated in the photograph showing Edmund F. Walker, of the company's enameling department, demonstrating the various steps in the enameling process, from the preparation of the slip and pickling of the ware to its firing in the small laboratory furnace.

Sales training course

Trainees are selected from graduating classes at colleges and universities. Columbia University, Pennsylvania State College, Lafayette College and the University of Pittsburgh were represented in the first session, concluded on December 31, 1947. Sessions are from 9:00 a.m. to 5:00 p.m. five days a week, with evening sessions from 7:00 to 9:00 p.m. three days a week. Sixty subjects are covered in the three months' course, ranging from instruction in gas and electric cooking to the actual building of the gas, electric and combination ranges.

During the first week, "Indoctrination" includes a detailed account of the company's history and its position in the industry. Considerable statistical information is given to assist the trainee in orienting himself, and frequent use is made of charts, projected photographs, etc., to illustrate the material given. Tours are taken through the plant and the company's business offices, the functions of the various departments are discussed by department heads, and by the end of the first week, the neophyte begins to feel at home.

The course includes a wide range of subjects. The nature of gases, their domestic and industrial uses, methods of distribution, etc., are covered in a series of lectures and demonstrations by the company's engineers. Similar treatment is given with respect to electricity. Engineering principles involved in gas, electric and combination range construction are discussed, and the develop-

ment of modern ranges is traced. Functions of the company's research division, the American Gas Association tests, as well as company tests, and related matters are presented in lecture and demonstration form.

During the early weeks in the course, two tours in addition to the "indoctrination" tour are taken through the plant, each time the student being given further detailed in-

Editor's Note:

We obtained some interesting background information in regard to the Roberts & Mander Training Program from Henry S. Minster, company president.

When it was decided to institute a complete training program, the first problem was to find a man whose experience and background fitted him to develop and initiate such a program. Robert H. Hicks, who was selected, had a background in both industry and finance. He had been a practicing lawyer prior to his association with the Federal Bureau of Investigation in 1934, in which organization he rose to the rank of Inspector. For a number of years he was identified with the FBI training program, and prior to and during the war years was in charge of the FBI Academy at Quantico, Virginia, later becoming counsel to the Reconstruction Finance Corporation. "It seemed to us," said Mr. Minster, "that Mr. Hicks' background, particularly in the FBI, which required the building of morale, loyalty and integrity, was important to our problem."

In developing the training course, the experience and ability of individual department heads were utilized to the fullest extent. Mr. Minster pointed out that there will be an elapsed time of approximately seven years between "active" pre-war and post-war selling. With the training program as described in the accompanying article, Roberts & Mander Corporation hopes ultimately to have the "best trained" sales force in the stove industry.

formation regarding the manufacturing processes. Finally, each shop superintendent lectures on his department in detail in the classroom and the accompanying photograph referred to previously depicts such a lecture and demonstration. After all departments are covered in this manner, the trainee spends two days in each shop and is required to submit a detailed account of the procedures

observed. The final step in this phase of the training is the actual construction and disassembly of the various ranges, which is accomplished in teams of two under the supervision of the plant superintendent and his associates.

A number of hours in the course are devoted to the functions of the company's kitchen cabinet division. Complete information is given to the trainees concerning the steel kitchen cabinets, sinks, sink tops, and other kitchen equipment sold by the company.

Such matters as "Advertising," "Market Research," "Purchasing," "Shipping," "Orders and Credits," etc., are handled by the various department heads. All office procedures, forms used, etc., are thoroughly discussed, so that the field representatives will have a thorough knowledge of home office activities and procedures. The course is designed so that a logical sequence is set up in presenting the material.

Field trips

During the course, field trips are made to observe steel making, the manufacture of gray iron castings and plastics. Before each trip the head of the purchasing department or his assistant lectures to the class on the material involved, and a review session is held the day following the field trip.

Each trainee, after completing the section of the course devoted to range building, receives instruction from service experts. This is followed by a week of practical experience with service experts, during which the trainee actually repairs ranges in users' homes. Near the close of the course, after lectures on "Salesmanship" and numerous "Practice Selling" sessions, the trainee spends two weeks in the field under the supervision of company district managers, who are required to submit a report on the training results.

One of the main objectives of the course is to equip the trainee so that he can conduct dealer and service schools. This is done through lectures and practice in "Teaching" and

Right: Sample sheets of steel actually being enameled before one of the two sections of the supervisory group by Edmund F. Walker of Quality. Below: One of the two sections of the supervisory group listening to sales representative, H. E. Fritz, describing an important feature of the Quality Electric Range.



session that this is the proper approach to the sales training problem. It is contemplated that at least two schools a year will be held, starting in July and in February.

The members of the February, 1948, Sales Training Course have been selected, and the class will convene at Hatboro on February 9. In addition to the men reporting for sales training on that date, a number of graduate engineers will report for a three months' course, designed to equip them for supervisory positions in the various shops. The two groups will be combined for the first four weeks, after which separate courses will be given.

Supervisor training course

This course, initiated at the same time the Sales Training Course was started, was designed to acquaint employees with the company's various activities and give employees a wider view of their duties and responsibilities. It has been enthusiastically received, 90% of those eligible to attend being present at the two hour sessions which are held one afternoon a week. Instruction has included lectures, demonstrations and moving pictures relating to the company's history, products, manufacturing processes, accounting procedures,

"Public Speaking." Each student must give a teaching demonstration on an assigned topic, and at the conclusion of the course, give a demonstration of the type given to retail dealer salesmen of one of the company's products.

mid-way through the course and at its conclusion. These are of several hours' duration, and cover the entire material given. Of course, oral quiz sessions are held with regularity during the training.

Management at Roberts & Mander is convinced by the results of the first

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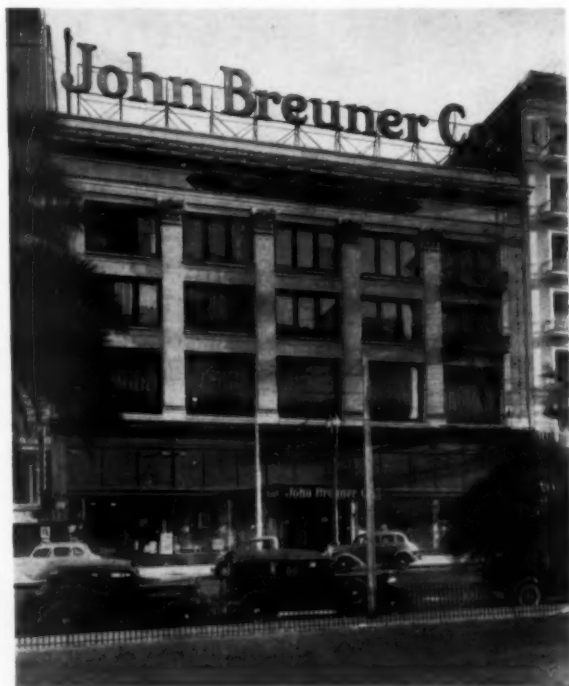
Written examinations are given
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San Francisco landmark

has new porcelain enameled face

a shining example of the adaptability of architectural
porcelain enamel for modernization work

By Elsa Gidlow • FINISH CORRESPONDENT



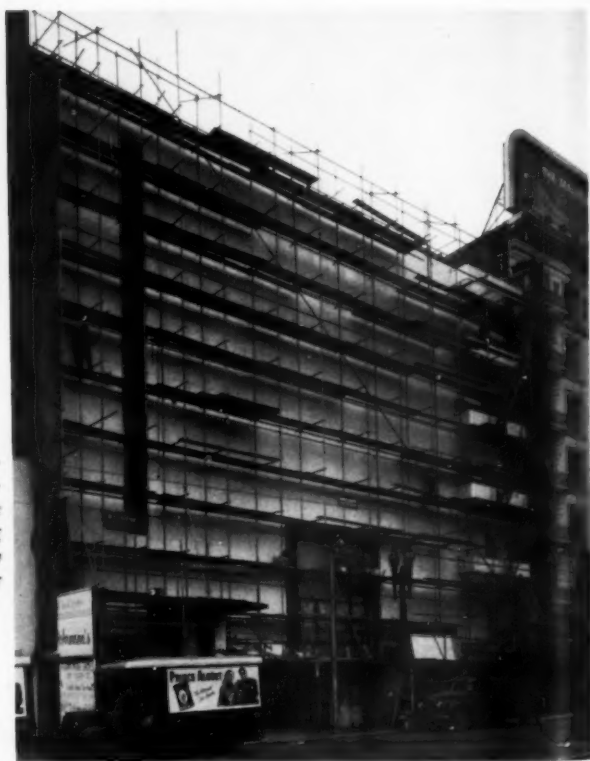
PHOTOS COURTESY COLUMBIA STEEL COMPANY

THERE are many reasons why property owners and architects choose porcelain enamel for modernizing old buildings — it's easy to apply; it lends itself to streamlining; during the day it looks clean and bright, after dark it reflects light for advertising; it is cheap to maintain in pristine condition, and outwears a lot of more expensive facings.

In the San Francisco Bay and Coastal regions, it's the architect's dream because his color and art effects — coming more and more into favor for the outsides of buildings in this sunny clime — are not affected by the year-round strong light that fades paints in no time, and the hard surface withstands the constant moist sea winds and corrosive salt atmosphere.

Left: This store is typical of thousands throughout the country where a "face lifting" job is needed to keep in tune with modern selling.

Right: This installation photograph shows the outdated building with its "new face" practically completed.



But when owners, architects and contractors got together on a face-lifting plan for the old John Breuner store facing on Union Square in

A one hundred and seventy-five ton weight saving

To carry this out in stone would have meant the addition of 200 tons

Architectural porcelain enamel, totalling approximately six thousand square feet, was used to face the entire building, giving it a spectacularly luminous and streamlined appearance by day and by night. Note how the sign treatment blends with the building. The very necessary but normally appearance-detracting fire escapes also have been treated to blend into the modern treatment.



of weight to the structure. Porcelain enamel facing added only 25 tons of weight. Porcelain enamel was chosen.

Solving the application problem of attaching the metal panels to the old masonry front, the contractors framed the original building with vertical steel studs on 4' centers overlaid horizontally with 16 gauge galvanized furring channels. The panels are $33\frac{1}{2} \times 40\frac{1}{2}$ self-flashing type reinforced with $3\frac{3}{4} \times 2$ galvanized stiffener channels to insure a flat surface and do away with any "waving." The panels are less than $\frac{1}{8}$ " out of flat as a result of the treatment.

Enameled mural to be included

A semi-matte finish is employed. The main panels are a clear cream color, the trim a red Vermont marble effect. Over the entrance is a large art panel framed by the same red trim. The latter was not completed at this writing, and temporary seasonal effects were being used by the store to dress up the space. The art work, scheduled for installation early in 1948, is by Sergeant Johnson, who is known for his murals.

The fire escapes and also the fire doors are covered with porcelain enameled sheets and in a neat way con-

tribute to the streamline effect.

Show window space and base have the red Vermont marble panelling as frame, setting off the displays of merchandise.

Sign designed for the building — not as an afterthought

The store sign is a vertical one with red block letters set against the cream porcelain enamel facing, with tubing on the outward-looking edge. It is a double sign with the store's name on both sides. Script letters over the entrance are of red porcelain with tubing on the face. *to Page 66 →*

Turnpike toll houses

reflect permanence of porcelain enamel



BEFORE cruising down Pennsylvania's 160-mile Turnpike, motorists must pay "entry fees" at porcelain enameled toll houses which look as new today as when they were erected more than seven years ago.

These permanently attractive box-office toll houses, which preview the modernity of America's leading highway, are located at ten terminals along the famed concrete belt which stretches over valleys and through mountains.

Architectural design impressive

The architectural design of the ticket booths at each terminal is impressive but not exaggerated. No unnecessary ornaments of any kind were provided. The plan of each booth was carefully worked out so that a minimum of steps and motions would be required of attendants.

Porcelain enameled 16 gauge steel panels, of a flanged or pan-type construction, form the outside walls of the toll houses. These removable water-sealed panels, with 1" insulation backing, are supported on steel superstructures. The interior of ad-

Top: An attractive canopy, finished in architectural porcelain enamel, provides shelter for attendants transacting business with motorists.

Center: This picture of the Bedford unit shows the canopy connecting ticket office with utility building.

Bottom: The five ticket offices at Irwin are shown as they appeared shortly before completion in 1940.



Left: Upon passing a ticket office at any point where access to the Turnpike is gained, the motorist received a ticket printed with rates to other Turnpike terminals.

Below: Because the greatest traffic load enters the Turnpike at opposite ends, five ticket booths accommodating six traffic lanes were installed at Irwin, western terminus. At Carlisle, eastern end, three booths serving four lanes were installed.



ja cent utility buildings are of 18 gauge sheet steel.

The glass side walls of the toll booths were so designed that practically 100 per cent vision would be available to the attendants viewing approaching traffic.

In choosing a color scheme for the terminal buildings, consideration had to be given to nature's bold color pattern which predominates in the mountainous region traversed by the Turnpike. Neutral or dead colors were considered inappropriate as also were gaudy colors. Light shades would have shown dust and dirt. For these reasons, blue surfaces relieved by bands of semi-matte cream, with

aluminum around the canopies, were chosen.

Five ticket booths serving six traffic lanes were installed at Irwin, western terminus, and three booths for four lanes at Carlisle, eastern end. Single toll houses are located at Bedford, New Stanton, Fort Littleton, Blue Mountain, Donegal, Somerset, Breezewood,* and Willow Hill.

First toll house erected at Bedford

The first toll house was built at Bedford with Norman J. Philpott, Porcelite Company, Lakewood, Ohio, superintendent of erection. His particular job was to instruct the foremen who were to supervise the erec-

tion of the other nine stations. The Enamel Products Company, Cleveland, supplied the porcelain enameled panels for this initial installation.

The porcelain enameled panels for the other toll stations were produced by Ingram-Richardson Manufacturing Company, Beaver Falls, Pa. Altogether, Ing-Rich supplied 21,000 square feet of porcelain enameled panels made of 16 gauge steel for nine toll stations.

Captain Gerald R. Tyler, Pennsylvania Turnpike Commission, was the chief architect for the project. Contractor for the job was Moyer Bros., Altoona, Pa., with George R. Hapgood Co., Philadelphia, sub-contractor.



The Invisible BONUS in every order of

PLANT TESTED



● Many times we've told you that PORCELFRIT is "plant-tested" right here in our own job enameling plant. You know that we subject it to conditions of actual use before offering it for sale.

But that's not all. We fully recognize that your demands—or equipment, or methods—may differ from ours. Therefore, we make sure that PORCELFRIT is right for you—not just for us—by sending a trained ceramic engineer to your plant to work things out with you. No obligation on your part. Drop us a line—or phone us—and we'll gladly send an Ing-Rich Ceramic Engineer. It's on the house!

**INGRAM-RICHARDSON MFG. CO.
OF INDIANA, INC.**

OFFICES, LABORATORY AND PLANT, FRANKFORT, INDIANA

Progress in the development of "low temperature" porcelain enamels

a development report on 1300° F. molybdenum enamels

By *Karl Kautz* • CLIMAX MOLYBDENUM COMPANY

NUMEROUS attempts have been made to develop low temperature white-on-steel compositions in past years, although the literature does not record any successful compositions. In 1941, the writer published (Molybdenum in Enamels, Part III, J.A.C.S. 28 (3) p 80) a number of experimental white-on-steel compositions, containing molybdic oxide alone and in conjunction with antimony oxide or zircon, maturing in the 1300° F. range. These enamels had good adherence to both sheet steel and cast iron. Molybdic oxide seemed to be an ideal ingredient in these enamels because:

1. It promoted adherence to steel.
2. It produced opacity, and
3. It contributed to high fluidity.

Since January, 1946, interest in 1300° F. enamels has increased, research work has been done, and plant trials have been made. Further research work on steel, enamel compositions, and application techniques is indicated.

Advantages to be expected

At 1300° F. a single white-on-steel coat would have many economic advantages over present high temperature enamels. They may be listed as:

1. Cheaper grades of sheet steel
2. Lighter gauges of sheet steel
3. Less warping or sagging of parts during firing
4. Lower fuel or power costs
5. Longer life of tooling, or the use of lighter and cheaper tooling
6. Longer life of refractories and resistors
7. More production with the same equipment and manpower

The quality of the enamels which have so far been developed for 1300°

F. is not equal to many higher fired coats. Lower maturing means lower silica content in most cases, and this in turn generally means greater solubility. 1300° F. enamels do not have the acid resistance, the scratch resistance, nor the opacity of some



finish photo

present high temperature cover coat enamels applied over ground coat.

In the development of porcelain enamels, there is always a compromise. The perfect porcelain enamel has never been invented or made. Where we gain on one hand, we lose on the other. This is just as true at 1300° F. as at higher temperatures, and we should accept the limitation inherent in this type of enamel. After all is said, the 1300° F. one-coat enamel would be a more economical porcelain finish than any now applied to sheet steel.

The enamels —

types and compositions

The goal, of course, is a finish coat directly on steel in one firing operation. Where higher standards must be met, two coats at 1300° F.

are still very much in the economic picture. All the advantages listed above, except increased production, still hold. Acid-resistant white cover coats at 1300° F. may be used as second coats to increase the usefulness in this field.

Several frit makers now have on the market 1300° F. enamels of low opacity which are in daily production of parts in black and colors. Plant tests on refrigerator liners with high opacity enamels have been made and more are scheduled to be run in the near future. Compositions in this field are characterized by low silica and little or no alumina. For white enamels, high barium oxide in the composition is desirable because it adds greatly to the opacity and lowers the amount of alkali usually needed. Recent X-ray spectrographs show that the molybdenum-bearing frit (no antimony) as quenched contains no crystalline material, but after heating to 1400° F. crystals of barium molybdate (preponderantly), calcium molybdate, and sodium molybdate (faintly) are present in the frit. Barium molybdate and calcium molybdate are good opacifying agents. In order to reduce solubility as much as possible, alkalis should be kept at a minimum. Lithium for sodium is an excellent replacement, but costly.

Some typical 1300° F. white-on-steel compositions, developed by the writer, are given in Table I.

These enamels have low acid resistance, about Class C. Reflectance for a coating .007" on steel fired at 1300° F. for 3½ minutes varies between 70 and 72 per cent.

For acid-resistant finishes (at the present stage of development), it is necessary to overspray the above

coat with an AR enamel. This often results in a surface of low gloss. Better finishes are obtained by a second coat and a second fire of the AR cover coat. At the present time, the only AR white cover coat that can be compounded for maturing at 1300° F. is an antimony-opacified enamel. These AR white antimony enamels are low in opacity, averaging about 62 per cent reflectance for a thickness of .007" and are usually too viscous for a successful white-on-steel enamel. However, applied over the more opaque molybdenum-bearing white-on-steel coat, a satisfactory product may be obtained.

An experimental AR antimony-opacified cover coat at 1300° F. is:

Enamel No.	5
Quartz	24.3
Borax - Anhydrous	4.1
Soda Ash	12.8
Sodium Nitrate	6.9
Fluorspar	4.7
Barium Carbonate	24.0
Zinc Oxide	3.3
Titanium	8.1
Antimony Oxide	11.8
	100.0

It has been reported that regular antimony and zircon cover coats have been developed which mature at 1300-1350° F. On ordinary cold rolled steels these cover coats must be applied over a ground coat. Clear ground coats maturing at 1250-1350° F. have been made which have excellent adherence to cold rolled stock. Some typical examples of clear ground coats are:

Enamel No.	6	7
Quartz	26.4	14.7
Feldspar	—	22.8
Borax - Hydrous	21.0	31.2
Soda Ash	10.5	12.2
Sodium Nitrate	7.5	3.0
Fluorspar	8.6	8.0
Barium Carbonate	26.0	8.1
	100.0	100.0

Adherence is promoted in this type of clear frit by the use of barium molybdate or sodium molybdate added at the mill along with antimony oxide. The mill batch is:

Frit	100
Clay6 or 7
Borax	0.25
Barium Molybdate	1.5 or
Sodium Molybdate	1.0
Antimony Oxide	1.0
Water	38.0

Table 1.

Enamel No.	1	2	3	4
Quartz	26.0	26.0	28.0	24.5
Borax - Dehydrated	11.0	8.7	9.4	—
Borax - Hydrated	—	—	—	19.5
Soda Ash	—	11.5	14.6	9.7
Sodium Nitrate	8.8	7.4	7.9	7.0
Fluorspar	8.5	8.4	9.1	8.0
Lithium Carbonate	4.0	—	—	—
Barium Carbonate	25.7	25.6	23.0	24.2
Zinc Oxide	3.5	—	—	—
Molybdic Oxide	7.5	7.4	8.0	7.1
Antimony Oxide	5.0	5.0	—	—
	100.0	100.0	100.0	100.0

Smelting temperatures from 2050° F. to 2100° F.

The mill charge is: Frit 100

Clay 5

Uverite 5

Sodium Nitrite 0.25

Water 36

Fineness 1-2 gms. — 200 mesh — 50 cc

Sp. Gr. 1.95 - 2.05

Application weight - 50 gms/sq. ft. dry

These clear ground coats also offer possibilities as color bases for some dark colors in one fire.

Steel developments and their relationship to 1300° F. enamels

During the past several years steel makers have conducted research work toward improving enameling stock. To the best of our knowledge, this research has been along two lines: (1) special non-boiling steels, and (2) special electroplated cold rolled steels.

The special non-boiling steels have shown promise when tested with 1500/1550° F. white cover coat enamels because blistering has been greatly reduced. 1300° F. enamels also can be applied successfully on these non-boiling steels.

The special electroplated cold rolled sheets were developed principally for use with 1300° F. enamels. At 1500° F. and above with regular cover coat enamels they act similarly to non-plated cold rolled sheets. They are reported to have two advantages: (1) a uniform, firm, dense plate of a metallic nature of carefully controlled thickness applied by electrodeposition, and (2) elimination of pickling and nickeling operations at the enameling plant—cleaning, rinsing and neutralizing sufficing in many cases.

White-on-steel enamels have been attempted many times in the past, only to run up against a stone wall

in the form of variable boiling tendencies of sheet steel. Above 1500° F. ordinary sheet iron or steel evolves gases which produce blistering in a white coat, or any coat, even blue ground coat. As far as the blue ground coat is concerned, because of its high fluidity, the prolonged heat treatment usually fires a blister down to a black speck, or if severe, a copperhead. These can usually be covered by a second coat.

It has been found that this evolution of gases from sheet steel is a function of temperature to some extent. Lowering the temperature of firing does not entirely eliminate gas evolution but it greatly reduces the amount.

Owing to the fact that enameling iron or cold rolled sheets evolve so little gas at 1300° F., colored enamels or white enamels may be applied successfully as a single coat.

Although molybdenum-bearing enamels can be made which will adhere to cold rolled stock without a nickel flash treatment or a special electroplate, it is not desirable to use the steel in this condition. The nickel flash treatment is desirable not only because it promotes adherence, but because it (1) lowers the bonding temperature about 50° F., and (2) produces white coats with greater opacity. Thus, without its use, higher temperatures would have to be

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SNAPSHOTS of Central District ENAMELERS

finishfotos

Top row: Left to right, Republic Steel's Burton Longwell and W. R. Willard with J. L. Lannan, Westinghouse; De Vilbiss' W. E. Dinsmore and R. E. Wolfe, Jr. flank R. E. Wolfe, International Engineering.



Second row: Ferro Enamel's G. E. Miller and E. A. Miller; Fred Menges, Strong Mfg., and Raymond D. Metzner, attorney for Cleveland Chamber of Commerce.

Third row: C. L. (Slim) Wilson, AllianceWare, and L. C. (Lew) Farrow, Harshaw Chemical; Clyde Porcelain Steel's Wilbur Meyer and E. M. Higley.

Bottom row: Edwin J. Silvers, Hotpoint, Russell Frank, Ferro, Geo. Stevenson, Cleveland Co-op; W. F. Rode, Enamel Products, M. H. Whitehead, Canton Stamping & Enameling, W. L. Housley, Republic Stamping & Enameling.

From the December 12 meeting.



Give signs their proper place in the advertising picture

straight talk to the sign and porcelain enamel industries
by one of the country's leading sign buyers

By Paul R. Fritsch • ADVERTISING SERVICE, THE GOODYEAR TIRE AND RUBBER COMPANY

THE sign industry is a loosely connected array of parts suppliers who vigorously, but not always intelligently, compete with each other for a share of the dollars spent for signs. The weakness is that individual members of the industry do not work collectively to increase the total dollar expenditures for signs. Each tries in his own way to prove that his particular product or part is *the* way to handle dealer identification or a sign problem.

In the jumble there is porcelain enamel and paint and neon and zeon; transformers and gold leaf and enameling iron and frit; cold cathode and hot cathode, wire and flares, nuts and bolts, service trucks and ladders, window signs and door signs, transparencies and decalcomanias, plywood and glass and plastics, sign poles and time clocks and flashers, embossed letters and changeable letters. There is an occasional voice of ethics, the sharp staccato of price, but the collective accomplishment is a piled-up mass of confusion, an extravagant, wasteful and inefficient tirade.

This cannibalism within the family makes the sign industry vulnerable to all other advertising media which almost without exception is first sold collectively, secondly, individually.

Newspaper space

Newspaper space is first sold on the effectiveness of newspaper advertising. Certain fundamentals are proved in authoritative fashion. The Audit Bureau of Circulations provides the advertising buyer with certification of circulation for every newspaper, the national and local rates, the ownership, and other important

data. Also the buyer knows that newspaper space has certain specific attributes. There is market selection by which the use of certain newspapers will reach certain audiences. Newspapers in county seat towns, newspapers in towns of 100,000 or more, newspapers catering to foreign language groups, and tabloid newspapers are but a few of the categories that can be selected to do a specific job at a specific price.

In short, *newspaper advertising is first sold as newspaper advertising, as a potent force to be employed for mass selling in selective fashion.* It is not sold in the form of type, paper, printing ink, stereotypes, newspaper mats, engravings, printing presses, linotype machines, skilled labor, plants, delivery trucks, and the like.

Direct mail

Direct mail is used to make direct contact with known prospects with a minimum loss of effort. For example, heavy machinery such as earth moving equipment is not sold to mass markets like toothpaste or razor blades. Hence it rarely appears in mass publications, newspapers, magazines; nor is radio an economical media. Direct mail is the media that can be pointed right at the known prospects, such as contractors, state highway departments, erosion specialists, and bridge builders.

Direct mail is not sold on the basis of paper, printing skills, copy writing, distribution, or any other family ability until it has been first sold into the advertising budget as a basic selling weapon.

Radio time

Radio is measured by the quality and quantity of the listeners, and

generally is considered a mass market media, with the added advantage of timeliness or the ability to mesh with current events.

The advertising budget must embrace all media that is considered usable or advisable for the movement of a specific product or service. In it there is competition between radio, direct mail, newspaper advertising, and outdoor advertising. It is not competition between type and live artist talent, or between paper and the wattage of a radio station, or printing presses and broadcasting equipment, or syndicated columnists and news commentators, or circulation figures and audience quality.

Now—how about signs?

It is not true that advertising agencies frown on dollars allocated to signs and dealer identification, or that they carry an aggressive battle against this media. This belief is a distortion of the real issue. Advertising agencies are machines of perfection, geared to the needs of their clients, accustomed to working with known principles in merchandise movement. They put together parts of known qualities and characteristics and costs to achieve a whole of known qualities and characteristics and costs. This advertising agency bugaboo has been manufactured in spare moments by the sign industry as a salve or medicine man for wound healing.

In order to project a sound dealer identification program, a national account must have the services of one or more trained men who specialize in identification. Their problem is to carefully screen all the parts, products and claims, and select from the

maelstrom of confusion the specific products which can be put together in an organized fashion to do a good job at an economical price level. Now this ideal situation is a valuable aid to the sign industry. But the real facts are that very few companies do this because they are not accustomed to operating in this fashion, just as they are not accustomed to operating this fashion on direct mail, newspaper advertising, radio or outdoor advertising. The advertising agency does the preliminary work in these fields and provides for the national account a packaged program.

We can truly say that the sign industry is throwing an important responsibility of its own into the lap of the advertising manager. The result in most companies is confusion inside the advertising department, with purchasing agents, engineers, and a lot of other personnel, that is not strictly identification-minded, doing the screening and the scanning with obvious results. The sign industry does not even supply a fundamental set of rules. Very likely because the industry itself is so closely meshed with the actual mechanics of the business that it has not iso-

lated fundamentals which apply right across the board. Individual members of the industry have what they consider fundamentals and, selecting a few of these at random, you get pictures like these:

That electric signs are preferable over non-illuminated signs; that porcelain enamel is preferable over paint *for any type of job*, and vice versa; and that exposed tubing is the only satisfactory method of illuminating copy on the sign.

The truth is that illuminated signs are justified only by night traffic, that no single finish is the automatic answer to every problem, that there are three basic ways to illuminate a sign and the selection should be based on the particular problem a national account has.

First—establish fundamentals

The start of the long up-hill climb, to get the sign industry on a level somewhere near the other media with which it competes, is the establishment of fundamentals which are common to all phases of the industry because they are based on needs of the consumer. In short, what the sign industry produces must do a functional job that the consumer requires.

Therefore, these fundamentals can be established in a broad sense without a bit of unfairness to any part of the sign industry because they are the ultimate objective of any kind of identification materials. Any material which does not attain this objective is not useful merchandise.

Fundamentals build the program for the sign user. He has a conception of the job he has to do, and can clarify his own policies as to what he must procure to do this job. On the other side of the fence, the fundamentals help the sign industry because the industry has a sound measurement of the functions that the materials must accomplish.

The materials produced by the industry are parts to be assembled to produce the end result. A storefront, for example, needs a projecting sign which usually will be illuminated, and some form of identification flat on the face of the building which may be of raised porcelain enamel letters, or flat porcelain enamel sign, or illuminated letters of some type, or wood letters, or any one of several other devices. Then there is supplementary identification such as the window valances, skeleton tube win-

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"A storefront . . . needs some form of identification flat on the face of the building which may be of raised porcelain enamel letters or flat porcelain enamel sign . . ."





SNAPSHOTS of Chicago District ENAMELERS

finishfotos

Top row: left to right, J. H. Schneider, Pennsylvania Salt, and G. E. Gustafson, A. O. Smith Corp.; Henry Oesterle, Roesch Enamel, and Frank Hodek, General Porcelain.



Second row: Herbert Van Straaten, Van Straaten Chemical Co., and Dr. A. I. Andrews, University of Illinois, speakers at the December 6 meeting.

Third row: Harold Gray, Vitreous Steel, and R. L. Cook, University of Illinois; Harshaw Chemical's W. King and A. H. Daumke.

Bottom row: Northwest Chemical's Keith Conley and Al Light; George Tuttle, Benjamin Electric, Wayne Deringer, A. O. Smith Corp., and Paul Gerdes, Hotpoint.



Will gas appliances be obsolete within the next twenty-five years?

a detailed outline of the possibilities in the extension
of utility gas service offers an answer to the question

By *E. S. Pettyjohn* • DIRECTOR, INSTITUTE OF GAS TECHNOLOGY

THE possibilities in the extension of utility gas service should not be obscured by the large amount of publicity being given to our fuel reserves. The emphasis given to coal as a basic raw material for fuel and gas supplies may cause the gas industry to overlook opportunities for extension of its service.

Gas and oil resources

While it is true that 98% of our mineral fuel resources are in coal, this reserve is so enormous that the 2/10 of 1% allotted to oil and the 2/10 of 1% allotted to natural gas provide enormous quantities of gas-making materials. This 2/10 of 1%, an estimated 20 billion barrels, is said to be an adequate supply for twenty years, and the 2/10 of 1% as natural gas represents some 174 to 200 trillion cubic feet which will provide adequate gas supplies for some thirty years. The marketed production of fuels and related materials for 1944 are shown in Table I. In 1925, the anticipation of an oil shortage led to the development of the by-product gas oven and the construction of these units in many utility properties in the north central states. This oil shortage did not develop and these plants subsequently were written off and torn down to make way for natural gas. The illustration is cited to emphasize that while now, as then, our ultimate reserves are in coal, the immediate future lies in utilizing natural gas and petroleum derivatives to the industry's best advantage.

Expansion in utility gas service due to high pressure pipelines

The enormous expansion in utility gas service during the past eighteen

years has been due to the construction of high pressure pipelines which have permitted the transmission of natural gas from the reservoirs in the mid-continental area to the large metropolitan areas and, more recently, to within a reasonable approach to the Eastern seaboard. This extension has been due to the demonstrated fact that a therm of heat energy can be purchased and transported more economically as 1,000 Btu natural gas than as a solid or liquid fuel. The availability of this high heating value gas had made it possible for gas companies to capture industrial, commercial and domestic markets not obtainable with lower

heating value gases manufactured from more costly raw materials.

For many years, the manufactured-gas man, producing his base load from by-product oven gas and his peak loads from carburetted water gas, has sought to capture the house heating market at times in competition with his own by-product coke. These attempts were largely unsuccessful due to both the high cost of production and the even relatively higher cost of distribution. The availability of natural gas demonstrated the reduction in distribution costs which could be obtained when higher heating value gases at higher pressures were transmitted through the

Table I.
Marketed Production of Fuels and Related Materials for 1944

	Weight (Thousands of Short Tons)	Heat Value (Trillions of Btu's)	VOLUME	
			(Billions of Cu. Ft.)	(Thousands of Barrels)
Total Coal (Anthracite and Bituminous) (a)	683,315	17,697		
Petroleum (Total Crude) (b)	257,198	10,066		1,677,744
Natural Gas (c)	92,555	4,115	3,829	
Motor Fuel (d)	92,232			732,000
Carbon in Produced Natural Gas (e)	69,416			
Total Organic Chemicals (f)	7,000			41,667
Non-Coal Tar Organic Chemicals (g)	5,000			29,762
Liquefied Petroleum Gas (h)	2,160	89	29	21,562
Carbon Black (i)	400			

(a) March, 1945, "Survey of Current Business," U. S. Department of Commerce Bureau of Foreign and Domestic Commerce. Assuming for anthracite—13,600 Btu per lb. and for bituminous—13,100 Btu per lb.

(b) Mineral Industry Surveys, U. S. Department of Interior, Bureau of Mines, December, 1944, issue. Assuming 7.3 lb. per gal. and 6,000,000 Btu per bbl.

(c) From Table No. 2. Assuming 48.35 lb. per M cu. ft. and 1,075 Btu per cu. ft.

(d) Assuming 2 million barrels per day, density 6 lb. per gal.

(e) Assuming carbon content of natural gas 75% by weight.

(f) Based on data from Chem. & Met. Eng. 52, 130 (1945). Assuming 8 lb. per gal.

(g) Includes chemical products of agriculture, products prepared from calcium carbide, petroleum chemicals, liquefied-gas chemicals and chemical derivatives of natural gas. Does not include chemicals produced for use in aviation fuel or explosives and other chemicals made at government ordnance plants or private units producing under ordnance control. Data from Chem. & Met. Eng. 52, 130 (1945). Assuming 8 lb. per gal.

(h) From Table No. 3. Assuming 4.77 lb. per gal., 32 cu. ft. of gas per gal., and 98,000 Btu per gal.

(i) Calculated on the basis of 800 million pounds of channel and furnace black, Mineral Market Report No. MMS, U. S. Department of Interior, Bureau of Mines, June 26, 1945.

REFERENCE: Pet. Refiner, 25, 98 (1946), January.

same distribution system.

Increased income level further demand for house heating

The ability to capture this house heating market has been due partially to the increased level of income within the United States which has enabled the customers' desire for clean, economical and readily available heat to be translated into a demand for house heating. This demand will continue as long as the wage levels are maintained and during the period when the price situation is so markedly favorable to gas. That gas may be purchased on a therm basis for less out-of-pocket cost than coal or oil is a factual demonstration of the economics of natural gas production and transmission as compared with the production and distribution of solid fuel.

In certain localities where through historical background high Btu gas had been distributed for a protracted period and where natural gas is available and underground storage within a reasonable distance, the house heating saturation is in excess of 90%. In these areas, there is no question in the mind of utility company executives that this market shall be served. In other localities where historical background has been one of the production of gas from coal, coke and oil, and where underground storage is not available and where the production of peak load gas can be accomplished through costly means, utility companies have limited their acceptance of house heating loads. Until quite recently, this limitation was of little concern as the public had believed that gas was out-priced in the domestic fuel market, but the penetration of natural gas into these same areas has forced a change in this attitude. Today these same people are anxious to exercise their desires for gas for house heating, and the utility company is the reluctant party to servicing this demand.

Peak load problems

This reluctance is due to the extremes of load produced by the acceptance of the house heating which

is potentially available. These peaks are so enormous relative to the base load that it will require the use of every combination of methods of production, distribution and storage that the gas engineers have or can devise. The current solutions to these peak load problems all are dependent

sented in Table II.

Fuel storage

Of the methods just mentioned, only underground storage has been developed to any widespread usage. Storage as hydrate is still in an experimental stage. Storage of liquid,

Table II.
Storage Capacities for Various Fuels

Fuel	Conditions of Storage	Heat Value/cu. ft.	Equivalent Storage as Natural Gas
(1) Natural Gas	as gas	1,000-1,050 Btu	1 cu. ft.
(2) Natural Gas	as hydrate	167,000 Btu	167 cu. ft.
(3) Natural Gas	as liquid	600,000 Btu	600 cu. ft.
(4) Natural Gas	as gas	238,000 Btu	238 cu. ft.*
(5) Normal Propane	as liquid	683,000 Btu	525 cu. ft. (a)
(6) Normal Butane	as liquid	770,000 Btu	550 cu. ft. (b)
(7) Gas Oil	as liquid	980,000 Btu	
(8) Bituminous Coal	as solid	625,000 Btu	

(a) Computed at 1300 Btu—due to increased sp. gr. of propane-air mixtures.
(b) Computed at 1400 Btu—due to increased sp. gr. of butane-air mixtures.

Types of Storage	Pressure	Temperature
(1) Standard water seal lift or waterless holders	atm.	atm.
(2) Well insulated alloy steel spherical holders	atm.	minus 146° F.
(3) Well insulated alloy steel spherical holders	3 psig.	minus 257° F.
(4) Bomb type storage	2250 psig.	atm.
(5) Cylindrical—1 1/4" to 1 1/2" CS welded tanks	100 psig.	atm.
(6) Cylindrical—5/8" to 3/4" CS welded tanks	40 psig.	atm.
(7) Cylindrical—3/4" to 3.8" CS welded tanks	atm.	atm.
(8) Open stock piles	atm.	atm.

*24" seamless molybdenum pipe—40' long—1 1/2" expansion bend.

on the continued availability of natural gas condensates or petroleum fractions and require ingenuity in handling these materials in one or more of several methods. The selection of method and of materials will depend upon the type or types of gas being distributed by the utility and by the organization of the production and distribution systems.

The simplest system is one in which natural gas is distributed and in which sufficient quantities are available from the pipe line to meet the total requirements at any one time. This unusual situation is only available near the natural gas fields. The more remote companies must resort to one or more of the following: underground storage, high pressure storage, hydrate storage, or liquefied storage. Or they may resort to the production of a substitute gas such as propane air gas, butane air gas, catalytically cracked hydrocarbon gas, or high Btu oil gas. The storage capacities for various fuels are pre-

while costly, has been developed as a practical operating method and will see further utilization. Storage at high pressures up to 2240 psig. is past the experimental stage and a 40 million capacity plant is being installed by a utility company in the middle west.

Use of propane air and butane air mixtures

The use of propane air and butane air mixtures was reviewed in a publication prepared by the Institute of Gas Technology for the American Gas Association Post-War Planning Committee as a result of a project supported by the Technical Section of that Committee. The process demonstrated its simplicity and reliability during the past seven years, and its acceptance has been almost universal within the gas industry. It does have several disadvantages in that to produce a completely substitutable gas requires an increase in heating value varying from 700 Btu, when substi-

tuted for manufactured gas, to 1450 Btu, when substituted for natural gas, and that the admission of large quantities of air in certain distribution systems may induce gum formation and internal corrosion. It has a further disadvantage in that, due to its increased gravity, it changes the combustion characteristics of appliances and increases the hazards due to leakage or outages.

The production of a substitute high Btu oil gas is past the development stage and is in operation at several points on both the East and West Coasts. In the majority of these installations, only intermediate gravity petroleum residues are used due to excessive carbon deposition when heavy residuums are substituted. The use of these lighter fractions increases the cost of gas making due to the higher raw material cost.

The Gas Production Research Committee studied these problems carefully and diligently during the past three years and instituted several research projects in an attempt to develop the necessary facts from which new processes may be evolved. It also has or will carry forward pilot-plant demonstrations of the processes which appear most favorable.

Research on catalytic cracking of light hydrocarbons

To overcome the disadvantages in the use of propane or butane air mixtures, the catalytic cracking of light hydrocarbons is being prosecuted in a pilot plant in the Tilghman Street Gas Plant, Philadelphia Electric Co., Chester, Pa. In this unit, tests have been run using propane, butane and refinery gas as charging stock for reforming into a blue water gas or carrier gas to be subsequently enriched with propane or butane to the desired heating value. These gases, due to their CO_2 , CO , H_2 and N_2 content and to their comparable gravity, are readily interchangeable with the manufactured gas or natural gas for which they may be substituted. This work is to be continued to develop the possibility of the use of lower pressure vapor hydrocarbons as the charging stock to the catalysts chamber so as to reduce both the cost of

raw material and of storage of the hydrocarbons required for making the reformed carrier gas. The results of this work, to date, have indicated already that the initial capacities estimated for catalyst cracking chambers can be markedly increased when reasonable amounts of air are added to the steam-hydrocarbon mixture so as to retard sulfur poisoning and carbon deposition and to provide a part of the internal heat required in the endothermic reaction between the hydrocarbon and steam.

The Committee is also sponsoring the test on the Hall regenerative heavy oil high Btu gas process at the Spring Gardens Plant, Consolidated Gas Electric Light and Power Co.,

production of large quantities of intermediate or high Btu gas with relatively low investment cost accompanied by short starting up periods and relatively low material and labor costs. The catalytic cracking units will also permit the location of small integrated units, semi or completely automatic at strategic points in the distribution system which will permit the feeding back of a completely substitutable gas from points in outlying districts which now may only be served through looping the distribution system. The ability to make gas of any heating value either through the catalytic cracking of light hydrocarbons or the production of intermediate or high Btu oil gas has given

Table III.

Illustrative Balance on U. S. Hydrocarbon Fuel Supply from Coal

Assuming synthesis plants would operate to produce both gaseous and liquid products at following yields per ton of coal.	Gas 7,000 cu. ft. Liquid 2.1 bbls.
*Net U. S. coal reserve expressed as bituminous equivalent	1,760 Billion Tons
Deduct reserve of solid coal for 1000 years at 600 million T/yr.	600 Billion Tons
Net available for synthesis	1,160 Billion Tons
Prospective Gas Yield	1160 Billion Tons x 7,000 = 8.1 Quadrillion cu. ft. or 2000 yrs supply at present consumption rate (4.1 Trillion cu. ft. per year).
Prospective Liquid Yield	1160 Billion Tons x 2.1 = 2,440 Billion Barrels or 1350 years supply at present liquid fuels consumption rate (1.8 Billion bbls. per year).

*From testimony before U. S. Senate, War Minerals Subcommittee, August 4, 1943, net is based on total mineable reserve of 3,178 billion tons all classes of coal and lignite, as of January 1, 1942, converted to bituminous equivalent (13,000 B.t.u./16) and assuming recovery of 69%.

REFERENCE: Gas Age, page 64, September 5, 1946.

Baltimore, Md. In this test, two 3-shell machines will be converted into a single 4-shell unit by cross-connecting the tops of the carbureters of the two sets and by blocking off the generators. The units will then become a twin carburetter, twin superheater set which will permit reverse blasting and carbon burnoff with resultant economies in both fuel consumption in heating and in steam decomposition due to regeneration during the make.

Large production at low cost

These two processes, when successfully demonstrated, will permit the

an improved flexibility to utility companies which formerly did not exist. Combinations of the various processes permit an almost indefinite expansion in the peak loads which may be served.

Where natural gas is also available on a limited basis, this gas may be used in a variety of means in order to extend gas service. Thus natural gas may be used for cold enrichment of by-product coke oven gas, of blue water gas, producer gas or air depending upon the demand on the distribution system. The carrying capacity of the system will be increased

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NESA holds second annual meeting

sign division of PEI meets to discuss color standards specifications and a sign market promotional program

AS the presses rolled to produce this issue of *finish*, the second annual convention and exhibit of the National Electric Sign Association was under way at the Stevens Hotel in Chicago. The three day program of conferences and addresses opened on Monday, January 19.

A growing association

In commenting on the 1948 convention, H. B. Link, executive vice president of Bellows Electric Sign Company, Akron, Ohio (see *"How We Use Porcelain Enamel in the Production of Electric Signs,"* January, 1948, *finish*), and president of the Association, said: "This is the best Association and the best meeting of sign men that we have ever had."

Featured speakers at the opening session, at which C. D. Blessed, president of Walker and Company, Chicago, presided, were: Robert E. Moore, general manager, Makelim Associates, Chicago, whose subject was "Streamline Your Selling as Well as Your Signs"; Frank W. Lovejoy, Socony-Vacuum Oil Company, New York City, whose topic was "It Is Later Than You Think"; and Dr. Alfred P. Haake, consulting economist and lecturer, whose subject was "What's Ahead for Business?"

Sign contest winners announced

David R. Swormstedt, vice president, Signs of the Times, and chairman of the Association sign design contest committee, presented the awards in the \$1,000 electric sign design competition at the Monday session. Four prizes, ranging from \$50 to \$500, and six additional honorable mention prizes of \$25 each were awarded for the best solutions to a specific problem presented in photograph form to entries in the competition.

The problem was an existing

corner drug store in an average-sized community, thus presenting a practical problem confronting sign designers. To meet contest rules, designs were to be for illuminated displays. All contestants were required to use the name "Corner Drugs" in their design, with additional descriptive copy optional.

The Board of Judges included: Martin Maher, The Florsheim Shoe Co.; Peter Sletterdahl, associate editor of the National Association of Retail Druggists Journal; Frank J. McCormick, The Walgreen Drug Company; R. S. Williams, International Harvester Company, and Sam Kamin, Neon Products, Inc.

Omaha man wins first prize

Following are the contest prize winners: First prize, Roger E. Dorrill, Omaha Neon Sign Company, Omaha, Nebraska; Second prize, Nels O. Swanson, White Way Electric Sign & Maintenance Co., Chicago,

Illinois; Third prize, C. G. Walton, architectural student, Rice Institute, Houston, Texas, and Fourth prize, Werner F. Savelle, Chassell, Michigan.

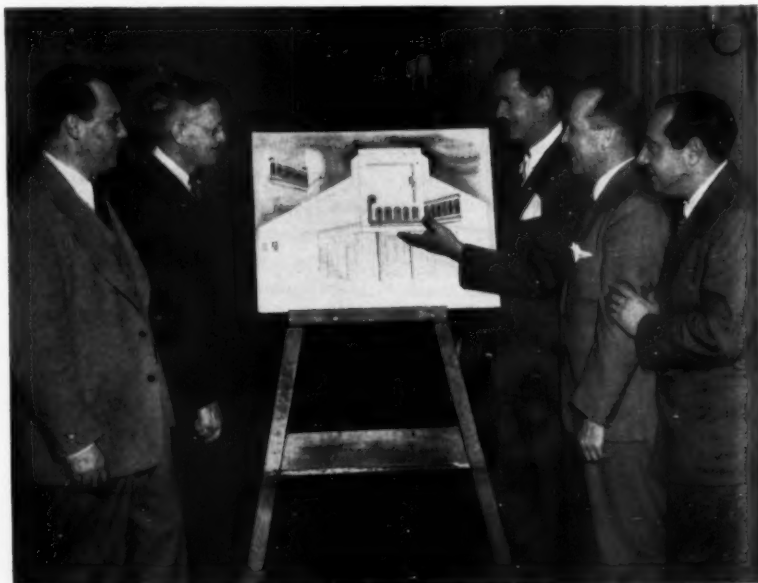
Honorable mentions, with \$25 each, went to: L. C. Hanson, Neon Products of Western Canada Ltd., Vancouver, B. C., Canada; Charles E. Trame, Neon Products, Inc., Lima, Ohio; D. C. Taylor, Chicago, Illinois; George H. Woodford, Portland, Oregon; William H. Ferguson, Textlite, Inc., Dallas, Texas, and Leigh Joyner, Ontario, Canada.

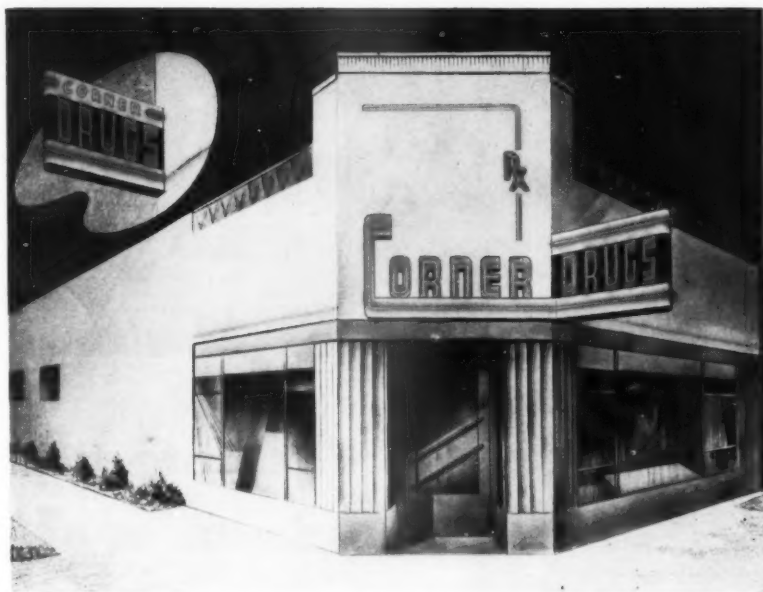
The Stuben Glass Trophy was awarded to Omaha Neon Sign Company, whose employee won first prize. Both cash prizes and the trophy were contributed by the Corning Glass Works, Corning, New York.

PEI sign division meets

A meeting of the Sign Division of the Porcelain Enamel Institute convened at 10:00 a.m. on the opening day and was attended by twenty-

Judges Maher, Sletterdahl, McCormick, Williams and Kamin view the original drawing which won first prize in the sign design contest.





This contest design by Roger E. Dodrill, of Omaha Neon Sign Company, won first prize of \$500.

three members of the porcelain enameling industry. Ed Mackasek, managing director of the Institute, explained the purposes of the sign group.

Harold Wineburgh, of Texlite, Inc., was unanimously elected chairman of the PEI sign division. J. H. E. McMillan, of Ingram-Richardson Manufacturing Co., Inc., Beaver Falls, Pa., was unanimously chosen as representative of the sign division in the PEI market development program.

Subjects discussed by the group included a proposal for adopting standard porcelain enamel colors for the manufacture of electric signs; a market development program for the sign division; porcelain enamel sign specifications; guarantees and other problems. Standard colors of the Outdoor Advertising Association of America were selected as "tentative" standards.

Committee appointed to develop permanent color standards

A committee of nine was appointed to develop permanent color standards for the PEI. The committee consists of William Wenning, Ceramic Color & Chemical Mfg. Co., chairman; Jake E. Eagle of the Pemco Corporation; R. F. Duncan,

Ferro Enamel Corporation; H. H. Draker, Harshaw Chemical Co.; Harold Brenner, B. F. Drakenfeld & Co., Inc.; R. L. Fellows, Chicago Vitreous Enamel Product Co.; J. W. Vicary, Ervite & Co.; Earl McDonald, Ingram-Richardson Mfg. Co.; and Ernest Hommel, O. Hommel Co.

R. A. Dadisman, American Rolling Mill Company, and chairman of the PEI market development committee,

presented current sign promotional plans, and asked for group support of an enlarging program. This committee was authorized to develop a constructive program for presentation at the next regular group meeting. Chairman Wineburgh was authorized to appoint small working committees to work on each of the individual problems presented at the meeting.

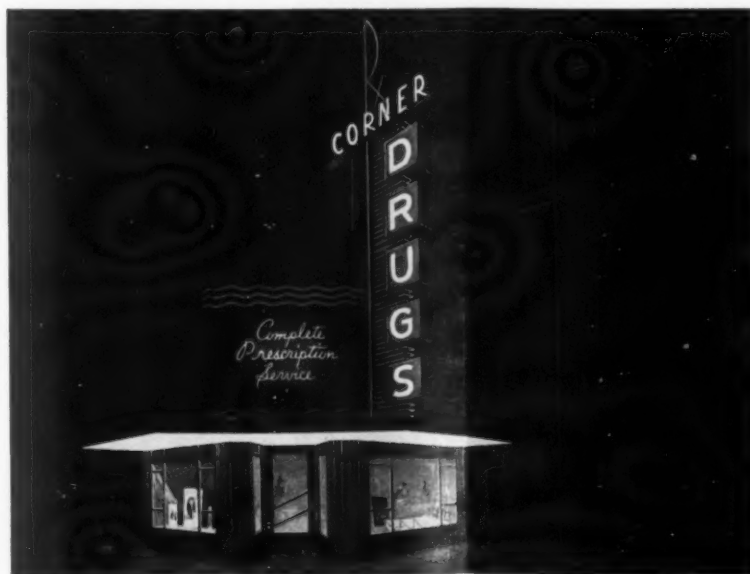
The program scheduled for Tuesday, January 20, called for a NESA business meeting with a special talk on National Electric Benefit Fund and relations with the Electric Sign Industry by an official from the International Office of I.B.E.W. in Washington, D. C. A review of NESA activities, planning for NESA's 1948 program and election of a Board of Directors was included on Tuesday's convention schedule.

The program schedule for Wednesday, January 21, last day of the NESA convention, included the following speakers and their subjects:

Martin Maher, advertising manager, Florsheim Shoe Company, Chicago, Illinois, "You Can't Put a Price Tag on Quality"; N. F. Lawler, director of advertising and sales promotion, Nash Motors Division, Nash-Kelvinator Corporation, Detroit,

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This night view of a proposed installation was the second prize winner. The design is by Nels O. Swanson, White Way Electric Sign & Maint. Co.





Left: This porcelain enamel topped breakfast set has seats that slide away under the table when not in use. It was shown by Ideal Steel Products, Inc., of Chicago.

Television pickup from the Hotpoint display in the Merchandise Mart shows Elizabeth Lyman, Hotpoint, demonstrating an appliance to Virginia Marmaduke, of the Chicago Sun.



Bob Hurt, vice president of Hurdwick Stove, shows a suggested location of one of the high oven ranges, which Hurdwick has just introduced, in a modern kitchen setup.



The international homern

winter market in Chicago

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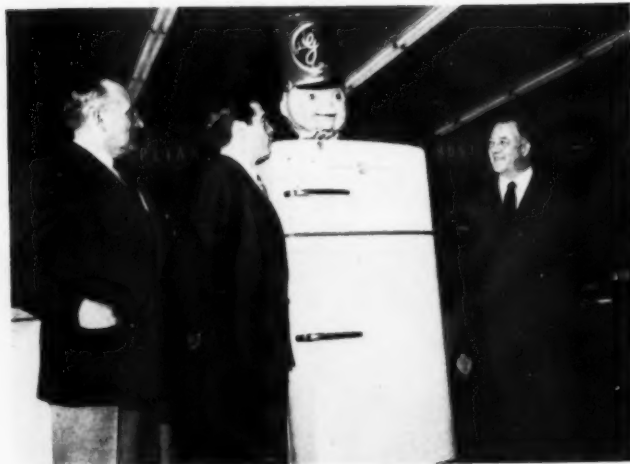
A SWING through the International Homefurnishings Market, held in Chicago, January 5-17, simultaneously at The Merchandise Mart and the American Furniture Mart, reflected a trend to fresh designs and colors. It was apparent that manufacturers were making preparations to forestall future consumer resistance by bringing out new and revised lines of their products.

This trend was emphasized at a press conference on housewares and appliances held in The Merchandise Mart on the second day of the winter show.

Manufacturer opinions

Venturing the opinion that a normal supply and demand is approaching, C. G. Frantz, president, Apex Rotarex Corp., Cleveland, stated that sales organizations should be built up as necessity calls for it. If the proper sales approach is used, said Frantz, the volume of sales should continue in 1948 and possibly exceed that of 1947. He cited figures showing that washers, ironers, dryers and vacuum cleaners produced in 1947 totaled 3,500,000 units (almost a billion dollars). Washers will remain in short supply throughout the year, but this is less true of ironers because that market hasn't been fully developed, said Frantz. Asked if he knew of any

A mechanical refrigerator that walks, talks and operates without visible aid is being interviewed here by Carl Ballus of General Electric, Phil Regan, stage, screen and radio star, and B. C. Bowe, of G.E.



Roper officials inspect a wedding gift to Princess Elizabeth before shipment to Great Britain. Left to right: Stanley Hobson, president, Carl Sorby, vice president, and Norman Kreuter, sales manager.



Right: "Time for bed and time for the new automatic defrosting refrigerator," says Norge. Refrigerator shuts off automatically at midnight and turns on again in three hours.

Left: In the Electromaster booth at the Furniture Mart are Ed Kramer, Doc Levis, Bob Roberts and Earl Sigler, company district managers.



na nurnishings market

Chico draws big attendance

shfotol those marked *

room for new developments in washers, Frantz told the newsmen that there would be radical changes in washers before the year is over.

Carl Kindl, vice president, Aviation Corporation, Detroit, emphasized the fact that if companies intend to stay in business, they must take advantage of new developments and bring out new and revised models. Those who plan to rest on their laurels will fall by the wayside, said Kindl.

The overall finish of products continues to be one of the leading reasons why customers buy certain merchandise. This little word of advice to manufacturers was injected into the press conference by R. H. Taylor, vice president, Florence Stove Co., Gardner, Mass., who told his audience that customers are buying on the basis of "quality, style and finish."

Publication representatives also were told that more thought was being given to eye appeal (color). Fred Keller, vice president, Ekco Products, Chicago, indicated that the housewife is showing some interest in getting away from white kitchens, with yellow gaining some popularity.

Other authorities speak

The growing importance of color in home goods was also stressed by Alfred Auerbach, New York merchandising consultant. Before a

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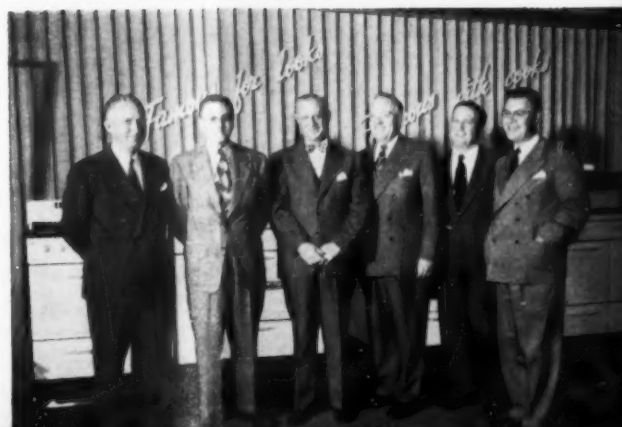


H. J. Walker, Jr., Chicago branch manager for Frigidaire, proudly displays a Frigidaire with porcelain enameled finish both inside and out.



Don Deveraux, Chicago representative for Florence Stove, is shown demonstrating one of the company's new ranges to a group of buyers in the company's display room at the Merchandise Mart.

A line up of sales representatives of Hardwick Stove Company. They include, left to right: A. B. Parker, R. Hayes Davis, John F. Broerman, Van F. Leach, Don Johnstone and Wayne Bovee.



breakfast meeting of the National Retail Furniture Association, Auerbach disclosed that the trend is for fresh pastel colors to replace vibrant tones. In his speech he made a rather detailed analysis of the business situation in the home furnishings industry.

"Generally speaking," Auerbach said, "prices are up 5%, 10% and even 12% since the July Market." In the main he agreed that higher prices have been caused by higher material and higher labor costs, but stated that there is also some "water" present in the current price structure. "A tougher competitive situation would quickly get rid of this 'excess weight' in the price structure," said Auerbach.

He concluded his address by saying that the immediate tendency is toward more shortages, more cost increases and more price increases, while the broader perspective is toward fuller production and sharper competition. "As a whole," he stated, "1948 will be the first year since 1942 when distribution and sales, and not production, will be the key problems facing American industry."

Harold G. Davis, management and merchandising counsel, advised NRFA members not to worry about getting goods. "October, November, and December, 1947, showed you how fast goods can roll in. . . For replacements, you may not get the goods you want, exactly at the time you want them, but you can get all the goods you can pay for — all the goods you need to do more business than in 1947," stated Davis.

Merchandise Mart televised

History was made January 7 when the winter show was featured in a two-hour television broadcast over station WBKB. Appliance manufacturers interviewed during the broadcast by Virginia Marmaduke, a Chicago newspaper reporter, included representatives of Easy Washing Machine Co., General Electric and Hotpoint, Inc. The broadcast covered the 18th, 16th, 14th, 12th and 11th floors of The Merchandise Mart.

American Furniture Mart jubilee

Coinciding with the winter furni-

ture show was the 25th anniversary of the breaking of ground for the American Furniture Mart. The celebration, held January 12, was the "kickoff" for a series scheduled intermittently through June 24 of next year, the silver anniversary of the building's completion, said Col. Lawrence H. Whiting, president of the Mart.

Originally devoted exclusively to furniture, Col. Whiting pointed out that "the American Furniture Mart now houses firms engaged in every phase of home furnishings merchandising and marketing."

Improved outlook for the housewares industry

"Having recently covered this country from Coast to Coast," said Fred Keller, Ekco Products, "it is my opinion that inventories are in much better shape than they were a year ago. Most of the ersatz material which bothered retailers a year ago have been eliminated. Buyers have learned

the importance of turnover and inventories have definitely been levelled off. It is not at all likely that purchasing will cease this year as it did during the early months of last year."

"When one considers that practically every home and every apartment being built means a brand new market for a countless number of housewares items," continued Keller, "one can understand why the outlook for the Housewares Industry should be extremely good for the next several years — barring any unforeseen disruptions to our national economy."

Among the exhibitors

Manufacturers of porcelain enameled appliances whose elaborate exhibits at The Merchandise Mart were visited by buyers include Hotpoint with their complete line of appliances, Easy Washers, Florence Stove with their ranges and heaters, Elgin Steel Kitchens with their porcelain enameled sinks, National En-

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The Washington round-up

By Wilfrid Redmond

STEEL using industries during the next few months will be confronted with a supply situation that will require constant scrutiny. As viewed today it may be more critical than at any time during the war.

Both domestic and export requirements for steel products will be greater. The manufacturer of stoves, refrigerators, or washing machines will have anticipated these mounting demands because this has been the pattern since the war. However, a new element now enters into the situation—voluntary allocations of steel. As this program takes shape, it appears that steel consumers are in for a rough time in the months just ahead.

"Voluntary agreements"

for scarce commodity allocation

The background and recent developments of this situation are set down in the following paragraphs.

The Taft Anti-inflation Act, passed by the special session of Congress in December, and signed by the President "although pitifully inadequate", authorizes the Government to initiate voluntary agreements for the allocation of scarce commodities by industries. Senator Taft said during debate on the bill that it could be used in the distribution of such commodities as steel to eliminate some of the unproductive uses of the material. The Taft Act embodies three of the President's recommendations for combating inflation. The voluntary agreements provision is the Republican substitute for the Administration's bill for restoration of selective allocation controls. The House voluntary agreements bill was voted down. Senator Taft, however, introduced the same bill in the Senate, which approved it. The House after rejecting its own bill, passed the Taft measure.

The President, after signing the "pitifully inadequate" Taft bill, issued directives to the Departments of Commerce, Agriculture, and Interior,

authorizing them to go ahead with the voluntary programs.

Steel allocation — big headache

The Department of Commerce, first of the three departments to set up the voluntary agreements procedure, established an Office of Industrial Cooperation and brought in an industrialist to direct it—John C. Virden, of Cleveland. Mr. Virden is chairman of the board of the Virden Manufacturing Company of Cleveland. The firm manufactures electrical equipment. During the war, Mr. Virden was regional director of WPB at Cleveland. He is a straight talking industrialist, under no illusions about the job of getting industry to allocate materials on a voluntary basis.

On his first day on the job, Mr. Virden met with the country's top steel executives who came to Washington to get started on a voluntary rationing program for the economy's basic material—steel. Meeting the press after the meeting Mr. Virden pulled no punches. "It may be like using a pea-shooter to bring down an elephant, but we will give it a try," he told business paper reporters.

To get started, the steelmakers will submit a panel of names to form an Industry Advisory Committee after the WPB pattern. At the same time, they will recommend a member of the industry for appointment by Department of Commerce to be director of the steel allocations program.

The procedure will be to have the Steel IAC recommend a program for rationing steel products to the consuming industries. The director of the steel program will work with the IAC in formulating a plan. It will then be submitted to the Office of Industrial Cooperation for approval.

Before the allocations are adopted, the various claimants for steel will be given an opportunity to state their needs at public hearings. This is the phase of the program that will cause the greatest headache, Mr. Virden

says. The Government has no authority under the Taft Anti-inflation Act, to tell an industry just how much steel it can have. The steel producers and the consumer have to work this out together.

If the program doesn't work out, Virden recently stated, industry will probably blame the Department of Commerce for its failure. But the Administration is taking no share of the blame for what happens. That is why an industry advisory committee and an industry program director are delegated the responsibility for establishing allocations.

Post positions for the free-for-all

The free-for-all to get steel is expected to make the early wartime battles in Washington look like a pink tea affair, in the opinion of insiders. Already the major claimants for steel are marshalling their arguments and doing a public relations job to get favorable positions at the post. The petroleum industry, which needs much more steel than it can get, has pointed out the probability of gas rationing unless sufficient steel is provided to manufacture additional equipment for production, distribution, and transportation. Congress has been asked to consider rationing of petroleum products. It is a safe bet that the petroleum industry will get a larger "take" of steel.

Steel executives, at a recent hearing before a House Public Works Subcommittee estimated that the automobile industry would use more steel this year than at any time in history. The washing machine industry is using more steel and requiring more than at any previous period, they said.

The finishing industries and the manufacturers of consumer durables using sheet steel would do well at this time to get their requirements carefully estimated and ready for presentation at the public hearings which will be held in connection with the voluntary rationing program. These conferences will be announced by the Office of Industrial Cooperation of the Department of Commerce. The Government will move to get the allocations program under way as rap-

idly as possible. It would appear that these hearings for steel claimants may be called about February 1.

With respect to the voluntary rationing there are several other factors which may be noted. The agreements are exempted from the application of the anti-trust laws. The Taft Anti-inflation Act also specifically excludes price agreements in the operation of the programs. The Act also provides that if the voluntary programs fail to work the President may come in and ask for mandatory controls. This he can do anyway. However, Mr. Virden stated frankly as he took over the job that there won't be any mandatory controls approved by Congress in an election year. The Administration, however, may be expected to ask for them about June 1, reporting the voluntary system has been a miserable failure. Mr. Virden hopes to do some good with the voluntary program, but it won't stop the rising tide of prices and shortages, he feels.

Soda ash is also on the program for voluntary rationing, according to a recent announcement of William C. Foster, Under-Secretary of Commerce.

Another program which will be undertaken soon after steel rationing is aluminum. A shortage of primary aluminum reached the critical stage recently and resulted in the light metal being placed on the civilian stockpile list again after all stocks in the Metals Reserve stockpile had been transferred to the military stockpile. Steel producers told the House Public Works Subcommittee investigating the black market in steel products that the washing machine industry is using larger amounts of aluminum to replace steel.

The increase in steel production will be offset by rising requirements and export allocations. The Harri-man Committee recommended that the requirements of the 16 Marshall plan nations for finished and semi-finished steel be cut back to about the amount we are exporting now, but there will be increases in agricultural machinery and freight car shipments abroad which will cut deeper into domestic supply.

There are two possibilities which

may contribute to an improvement in the steel supply situation. The first is that many European countries will not have the dollars to continue their present level of imports. Also, the new provision in the Export Control procedure enacted in the Taft Anti-inflation Act requiring that export licenses be issued on the basis of the lowest price submitted may discourage export shipments at the present level. These are strictly outside possibilities.

Some lighter touches

The Office of Industrial Cooperation is, of course, already known as OIC. The press rooms already have a slogan for it: "Don't be a joik. Woik with OIC."

The resolution setting up the subcommittee in the House Committee on Public Works originally proposed an investigation of black markets in scarce materials. Republicans on the House floor changed it to an investi-

gation of "questionable and conspiratorial practices," because they want the term "black market" to be associated exclusively with OPA—until November 2 at least.

The Taft Anti-Inflation bill got lost in the White House. A copy had to be flown to Massachusetts for Speaker Joe Martin to sign. The mystery has never been cleared up but the backstairs gossip at the Executive mansion is that it was stolen as a gag to poke fun at the Republican program for curing inflation.

Henry Kaiser came to the first voluntary rationing meeting of steel executives with his own "Plan to Curb Inflation and Increase Steel Production." He had announced in a press release that he was submitting the plan to the Office of Industrial Cooperation. Neither the Department of Commerce or the steel leaders would consider it. They told Kaiser to come back later when the program got under way.



"Don't pay any attention to my husband, Mr. Gravitt. All he ever thinks about is the high cost of living."

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Consult with our packing engineers on product protection — Our designing and testing laboratory is at your service, without obligation.

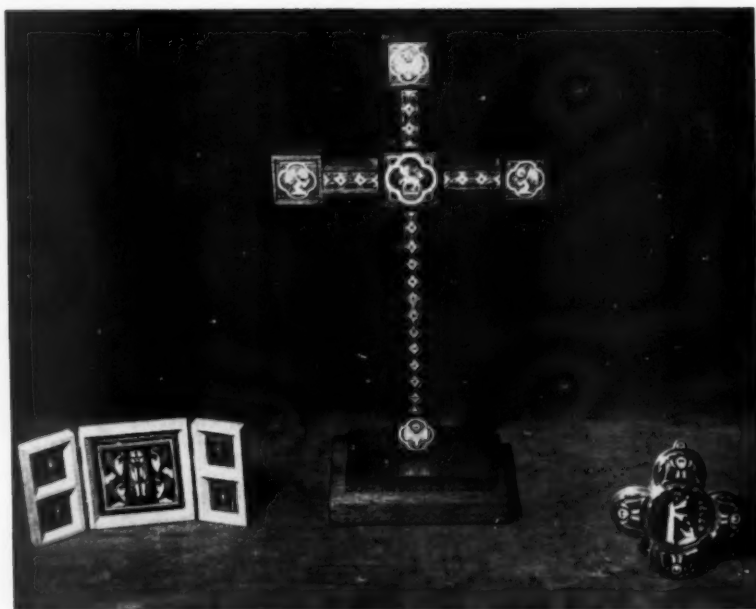
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Enameled art prize winners at 12th National Ceramic Exhibition



Left: Three enamels, "Angus Dei", triptych "Christ in Majesty" and wall cross "Annunciation" by Charles Bartley Jeffery, Cleveland, Ohio, were awarded \$100 prize presented by Ferro Enamel Corporation at 12th National Ceramic Exhibition, Syracuse, New York.

Left below: Shown are two of four enameled bowls for which Karl Drerup, Campton, New Hampshire, was awarded \$100 prize presented by Hanovia Chemical and Manufacturing Company.

Below: Shown is one of a group of enamel miniatures for which Lisel Salzer, New York City, was awarded \$100 prize presented by B. F. Drakenfeld & Company.



Sixth annual meeting of washer and ironer manufacturers association

Roy Bradt to again head association activity

AS I believe we have said before, the American Washer and Ironer Manufacturers Association represents one of the most live wire cooperative groups that it is our pleasure to work with for *finish*.

Their sixth annual meeting, held January 6 at the Morrison Hotel, Chicago, showed further advancement in all phases of Association activity. Under the leadership of Roy Bradt, president, and the capable management of A. H. (Jack) Noelke, secretary, Tuesday's 12-hour session covered every phase of industry activity, with time included for an informal luncheon and a most successful banquet and entertainment session in the evening.

Dollars for pennies

The president's report comprised one of the most thorough selling jobs on the advantages of cooperative industry activity that it has been the privilege of your reporter to hear. Mr. Bradt opened with the assumption that "Mr. X," a member of the Association, might be skeptical of the actual benefits obtained from the various phases of Association work, and then set about to prove most conclusively that each member gets a minimum of \$9.43 in benefits for every dollar he pays in dues. By evaluating the work of each committee in dollars and cents, and then conservatively fractioning it, he was able to show a definite return to every member. It is interesting to note that the savings to member companies from the work of the *traffic committee* alone would far more than pay for the total expense of Association activity.

No member of this closely knit group could have heard the president's report without gaining new

enthusiasm for cooperative activity.

National demonstration week suggested for washers

E. L. Farquharson, of Landers, Frary and Clark, chairman of the *conventional washer committee*, comprising wringer, spinner and portable washers, proposed a series of National Washer Demonstration Weeks, dates to be allocated to the various conventional model manufacturers desiring to participate, with each working toward five objectives in his week: live demonstrations, local tie-in dealer advertising, synchronized factory national advertising, proper window and floor displays, thorough briefing of dealers by manufacturer and distributors on product's special selling points and features to be emphasized in The Week.

He pointed out that even in a lush market this lower-priced equipment accounted for some 75 per cent of all units, excluding portables, in 1947, but that this can not long continue, that every make soon will have to sell on its own merits, that profits of '47,

if any, must be plowed back into improving conventionals in styling, features, quality, etc. He pointed to 6,000,000 war brides as logical prospects for washers in the lower-priced brackets.

Automatic division studies installation costs and codes

W. F. Linville, general sales manager, Bendix, presented the *automatic division* report on behalf of Jud Sayre, chairman. This report took cognizance of the possibility of restrictive plumbing codes and practices spreading past the many markets where they already are found, resulting in continued excessive installation costs for automatics, and recommended that the Association, through its engineering and research committee, study local plumbing codes, inform automatic manufacturers on the markets where rigid codes are in effect and arrange to work for the standardization of codes, to the end that approval by a central testing laboratory be recognized as sufficient.

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Dr. Alfred P. Haake, consulting economist and lecturer, and Roy Bradt, president of AWIMA, exchange views on business trends.



finish photo

5 practices



This emblem designed by P.E.I. identifies products finished in genuine Porcelain Enamel. It sets these products apart as having the highest quality finish and guides the purchaser in making his selection. It is offered to manufacturers using genuine Porcelain Enamel as an important part of their product finish.

Here are
reasons why **APPLIANCE**
MANUFACTURERS
should join the PEI

- You become an integral part of a nation-wide organization vitally interested in the technical advancement of Porcelain Enameling practice.
- You share in a united promotional effort, designed to expand the market for Porcelain Enameled products.
- You help sponsor an organization dedicated to planned programs for the advancement of the industry.
- You participate in establishing nationally recognized standards for Porcelain Enamel that protect manufacturers of quality products.
- You cooperate with other progressive organizations of an active, growing industry, that will be *working for* you to help save production dollars — to help build and a better product.

GET THESE BENEFITS...JOIN NOW!

PORCELAIN ENAMEL INSTITUTE, INC.

1010 VERMONT AVE. N. W., WASHINGTON 5, D. C.

→ from Page 43

The automatic committee also recommended preparation of specific information as to water temperatures required to make bacteria harmless and as to the sanitation requirements of self-service laundries. A special committee was named recently to study legislative matters in this connection, consisting of Jud Sayre, Bendix; H. P. Nelligan, Easy; and L. C. Upton, Nineteen Hundred.

Schools considered important to marketing program

I. N. Merritt's report as chairman of the *ironer committee* was unique. It is in bound form, includes pictures of old ironing machines, charts, statistics, tear-sheets and what-have-you. The committee bore down hard on each ironer manufacturer's adopting a definite program for 1948, designed to get part of its output into schools and colleges, especially those which have requested that "Simple Ways to Better Cleanliness" manual offered by the Association. The committee report suggested various methods for introducing ironers into these institutions.

In groups of non-owners of ironers interviewed as part of the committee's work, 71 per cent to 90 per cent said they would like to own ironers. The reason most often quoted for non-ownership at this time was "price," but no effort was made to learn whether the respondents actually knew what ironers cost. Almost 90 per cent of the non-owners felt they would be able to run ironers successfully, 69.5 per cent of the single women said they would like to own an ironer, and 37.5 per cent of the single males answered to the same effect.

The report also listed and recommended twenty-eight promotion ideas for moving more ironers.

Home laundry design service suggested

H. G. Evans, Hamilton Manufacturing Co., chairman of the *dryer committee*, recommended preparation of good designs for complete home laundries, to be placed in the hands of architects, home builders and trade

and architectural publications, that similar work be done with the women's magazines, and that the Association's publicity counsel also promote the use of proper super-line electric service, 220-volt, 3-wire system, in homes as an aid to proper functioning of all home laundering equipment.

The committee also urged the use of a generic phrase or slogan as one means for emphasizing the sale of the complete laundry as one production unit.

A \$125,000 saving by traffic committee

Traffic committee reports are usually dry as dust to everyone but traffic men. However, the president's report pointed out that this committee, in just one line of activity, saved the members \$125,000 in 1947, and that other savings computed have likewise been outstanding. R. H. Thompson, Maytag, is the committee chairman.

C. L. Atkinson, Easy, chairman of the *parts and service committee*, gave a detailed report offering specific recommendations for the handling of parts for service and replacement work. The report of G. W. Yeager, Dexter, chairman, *cost accounting committee*, in which certain manufacturing cost studies were discussed, was reserved for further consideration.

Standards and test procedures given important part in association activity

G. I. Cockerill, Apex, chairman of the *engineering and research committee*, made probably the longest report of the day. His committee has completed much valuable work on washing test procedures, is working, or will work, on ironer and dryer standards and test procedures, and is tied into the plumber's code and sanitation features of the association activity.

The proposed activity includes cooperation with the American Standards Association, Underwriter's Laboratories, and American Institute of Architects. Dave Hays, consultant, heads a sub-committee on this problem which will coordinate all present

standards into one concrete code.

Cockerill pointed out that the automatic washer has brought new engineering problems to the industry which were not inherent in the manufacture and sale of conventional or "package" washers requiring no connections other than the "plug in." Work is under way to establish a national plumbing laboratory, with the American Society of Sanitary Engineering in charge. The sole purpose of this laboratory, to be headquartered in Chicago, is the protection of public health.

McCarthy trading area system adopted

M. A. Toussaint, Simplex Division of Barlow & Seelig, chairman, *advertising and market research committee*, reported on the McCarthy Trading Area System of reporting sales. This breaks the country into more than 600 zones. It is used now by other home appliance groups and is claimed to give any industry and its members a much clearer and more helpful method for comparing sales and potentialities than the state breakdown used now by AWIMA.

The McCarthy plan was presented by John A. Drake, of Norge, heading a special sub-committee including C. A. Brewer, G.E., and A. E. Cascino, Bendix. The Association voted to follow the recommendation of this committee for the adoption of the McCarthy plan.

Publicity efforts show big return

Bill Shaw, publicity counsel for the Association, outlined the many services performed for the members and the Association, and offered some interesting circulation and distribution figures. He urged the diversion of a small percentage of total washer production to schools for educational work. Total magazine circulation of educational material was calculated at 252,375,000 readers; radio broadcasts were calculated at 100 broadcasts per month, and additional information included in newspaper articles was calculated at a circulation of over 350,000,000.

Paul Nelligan, Easy, spoke for the *fair trade practices committee* and



SNAPSHOTS FROM THE ANNUAL AWIMA MEETING



Top row: left to right, Carl Huff, Bliss & Laughlin, Louis Upton, 1900, and Harry S. Smith, Burgess-Norton; B. J. Hank, Conlon-Moore, C. G. Frantz, Apex, and O. A. Lenna, Blackstone.



Second row: C. A. Houseknecht, Zenith, and John W. Young, Young Corp.; Norge's E. R. Bridge and H. L. Clary.



Third row: A. H. Noelke, AWIMA secretary, and W. Neal Gallagher, Automatic; O. G. Neumann, Inland Steel, and J. D. Delanty, Bliss & Laughlin.



Bottom row: Ironrite's Gordon Wilkins, Bill Alkire, Harry Riemer and Dick Sierk; Easy's R. E. Weiss and Philip Gassey, F. P. Coyle, Electrical Merchandising, and C. L. Atkinson, Easy.

finishfotos



outlined a program of procedure for the discussion of a fair trade practice code to be patterned after codes approved by the Federal Trade Commission.

Associates group plans for big July meeting

Harry S. Smith, Burgess-Norton Mfg., chairman of the *associates committee*, dealt almost exclusively with recommendations for next summer's meeting at Mackinac Island, July 15-17, inclusive. There will be a special train from Chicago and special cars from the East to transport members to Mackinaw City.

A depression is coming?

Following luncheon, Dr. Alfred P. Haake, marketing consultant and eminent lecturer, talked on "What's Ahead for Business?" Dr. Haake feels that if we follow the present trends the world's greatest depression is inevitable. He doesn't look for it in 1948, due to the relationship of demand to supply and low inventories for most commodities. The disturbing feature, says Dr. Haake, is that we see it coming, know approximately what is causing it, but are doing nothing about it.

He stressed the fact that wages always lag behind rising prices and that they also lag on the downward spiral. It is his feeling that what labor needs now is reasonably sure employment with lower prices and labor prices unchanged. One thing only can save industry in this connection, and that is *increased production*. He cited one study where labor was endeavoring to get a 33¢ an hour increase but settled for 18½¢. The result—an increased price in the product. The study showed that if the same production had been maintained as in 1941, a 52¢ an hour increase could have been paid *without* price change.

Included in suggestions for business executives were the development of a better understanding of production processes and a closer, more intimate understanding between labor and management.

He cited as fallacious the idea that if the business of one industry in-

creases, the increase must come from other fields. Greater production means greater buying power and helps *all* industry. Associations should work together to block the current trends leading to a depression.

The health question looms as important

W. F. Linville, Bendix, presented a special report on the attacks which have been made upon coin-operated washing machines as alleged bacteria danger sources. He reported that exhaustive washing tests in a washing machine by an independent laboratory, with water from 140 to 160 degrees, proved that bacteria were reduced by 90 per cent to 98 per cent. The initial washing eliminated B. Coli bacteria present in diapers.

In the belief that there will be a continuation of activities against coin-operated washers, Linville recommended that the Association conduct an independent investigation through "a top-flight testing laboratory" and that the facts be given to all Association members and be given "wide publicity across the nation."

To sponsor panel discussion at home builder show

AWIMA is planning to be represented at the National Home Builders Show at the Hotel Stevens, February 23-25, with a panel discussion on the importance of correct laundry planning in new construction, with Grant Layng, Bendix, as moderator. Leading authorities from allied fields will comprise the discussion panel. Members for this panel will include Helen Kendall, Good Housekeeping Magazine—"Laundry Needs of Mrs. America"; A. Sworn Goldman, Architectural Forum—"The Packaged Laundry"; Dave Hays—"Installation Problems"; and Andy Place, South Bend, Ind., builder of small homes—"The Laundry in Small Homes."

Officers slate re-elected

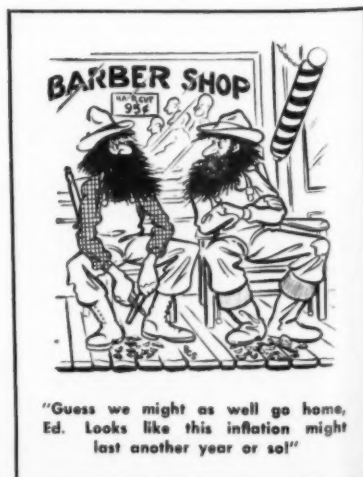
Closing business for the day was the report of the *nominating committee*, consisting of Neal Gallagher, John Wicht and Lou Upton. Their suggestion for the re-election of the complete officers slate was unanimously approved. The officers are: Roy

Bradt, vice president of Maytag Company, president; C. G. Frantz, president, Apex Elec. Mfg. Co., 1st vice president; O. A. Lenna, president, Blackstone Corp., 2nd vice president; J. C. Nelson, chairman of the board, Easy Washing Machine Corp., 3rd vice president; and B. J. Hank, president, Conlon-Moore Corp., treasurer.

The *advisory committee* consists of the three most recent past presidents—Louis Upton, president of Nineteen Hundred Corp.; John Wicht, vice president, Blackstone Corporation; and Neal Gallagher, president and general manager, Automatic Washer Co.

The *executive committee* for the forthcoming year is composed of C. E. Anderson, manager, Home Laundry Equipment Division, General Electric Co.; H. G. Evans, vice president, Hamilton Mfg. Co.; George P. Castner, general manager, Beam Mfg. Co.; E. L. Farquharson, sales manager, Home Laundry Division, Landers, Frary & Clark; F. M. Mitchell, manager, Laundry Equipment Division, Frigidaire Division, General Motors Corp.; I. N. Merritt, vice president and general manager, Conlon Division, Conlon-Moore Corporation; H. P. Nelligan, president, Easy Washing Machine Corp.; and Judson S. Sayre, president, Bendix Home Appliances. Evans, Mitchell, and Merritt are new members of the committee.

The high point of the evening's entertainment was furnished by Edith Elasho, star of "Blossom Time."



DESPATCH Gives Faster Finishing and Lower Labor Costs on Motorcycle Parts



Motorcycle rims emerge at right after 60-second Spr-Bonderite process. Metallurgist tests strength of solution at left.



Fraged by Bonderized motorcycle rim, Victor Ludvigson, assistant foreman of enameling at Harley-Davidson, records temperature of dry-off oven.



Taking viscosity test in 1100-gallon prime coat enamel tank. Adjoining tank has finish coat. The 960' chain travels 4' per minute, handles 3000 lbs. of parts per hour.



Reading temperature charts on automatic, gas-fired heaters which heat heat into bake ovens behind wall of left. Primer bake temperature: 400° F., finish bake, 325° F. Bake floor 45 minutes per oven.

**Harley-Davidson,
motorcycle manufacturer,
now uses a complete DESPATCH
Finishing System**

"We want faster finishing—greater production—in the same floor space at a lower labor cost per unit," said Harley-Davidson Motor Company of Milwaukee. DESPATCH engineers supplied the answer—a complete finishing system with automatic conveyor which practically eliminates manual handling. An endless chain travels at 4 feet per minute, finishes 3000 lbs. of motorcycle parts per hour.

In the automatic, 5-stage DESPATCH-built, Spr-Bonderizer, the parts travel thru cleaner, hot water rinse, Bonderite, clear water rinse and final Parco-

lene rinse. The parts continue thru a DESPATCH dryoff oven, then to 1100-gallon DESPATCH dip tanks for the prime coat and later for the finish coat. They are finish baked in modern, space-saving DESPATCH-built roof ovens. Gas-fired, electrically-controlled ovens bake prime coat at 400° F., finish coat at 325° F.—for 45 minutes each.

DESPATCH engineers had complete responsibility for this finishing system. With their 46 years of experience, they can help solve your finishing problems, too.

DESPATCH OVEN CO., 409-33 S.E. 5th St., Minneapolis 14, Minn.



WRITE TODAY for new Bulletin 51, complete with installation photos of ovens, Bonderizers, air make-up, etc.

BAKING OVENS • RUST PROOFERS
DRY-OFF OVENS • SPRAY BOOTHS
AIR CONDITIONERS • CONVEYORS

DESPATCH
OVEN COMPANY

The international homefurnishings market

(Continued from Page 38)

ameling & Stamping, Aviation Corp., Estate Stove, Standard Gas & Equipment, Polarware, and Landers, Frary & Clark.

Most of the kitchenware manufacturers have exhibits such as Bellaire, Vollrath, Moore Enameling, Fletcher Enameling, Columbia Enameling, Belmont Stamping, Republic Stamping, U. S. Stamping, Lisk-Savory, etc.

At the Furniture Mart, two floors of much interest are the 5th and the 17th. On the 5th floor are exhibits of a large group of major appliance producers such as Frigidaire, Norge, Kelvinator, Westinghouse, General Electric, Caloric, Estate, Cribben & Sexton, Roberts & Mander, Roper, and many other washer, ironer, range, heater and refrigerator producers.

Buyers roaming the 17th floor of the American Mart saw Kemper kitchen cabinets with porcelain enameled sinks and cabinet tops, Ohio Stove Company porcelain enameled heaters, Stiglitz "warm-air" heaters for coal, Armstrong Products with radiant type heaters, Elgin Steel Cabinets with porcelain enameled sinks, Young washing machines with porcelain enameled tubs, Palley steel kitchens with porcelain enameled sinks, Siegler "Karbon-Kleen all-porcelain room heaters, Cole's heaters with porcelain enameled interiors, etc.

Hardwick Stove Company, on the 15th floor, is attracting much attention as a result of introducing a "high oven" range at the Mart.

G-E exhibit built of architectural porcelain enamel

One of the most important displays from the standpoint of porcelain enamel is the G. E. exhibit. This large space is entirely enclosed with an architectural porcelain enamel exterior. The attractive blue-gray tone of the enamel forms a perfect background for G.E.'s trade mark and insignia. (You will read more about this unusual installation in a later issue of *finish*.)

One of the outstanding users of porcelain enamel as a sales help is Caloric Stove Corporation. To the porcelain enameled range top is applied a 4½" x 12½" tape on which is printed "A Dozen Good Reasons Why You Will Want a Caloric." Of the twelve sales points, five include porcelain enameled features.

A visit to the leading manufacturers' exhibits and conversations with key sales personnel by an enameling industry representative would con-

vince him of one very serious need. Sales personnel, in general, have not been furnished sufficient information concerning the characteristics and sales advantages of porcelain enamel to encourage them to make use of its advantages in sales work. In fact, it is not unusual to find salesmen making derogatory remarks about the finish. It would appear to be the responsibility of the enameling industry to get sufficient constructive information in the hands of all key salesmen in the manufacturing group so that they may take advantage of its possibilities as a sales aid.

Employee training gets the spotlight at the home of "QUALITY" ranges

(Continued from Page 19)

sales, purchasing, etc. The first course was terminated during the first week in January, when the company's advertising manager gave the class details concerning the company's national advertising campaign which opened with an advertisement in the January 10 issue of the Saturday Evening Post.

The company is planning a second

ten-week course to commence on February 9 when further subjects will be discussed and more detailed information on subjects covered in the first course will be given. The enthusiasm exhibited by the employees in the first course indicates the need for this type of training in industry. Plans for further training in specialized lines are now being made.

NESA holds second annual meeting

(Continued from Page 35)

Michigan, "Selling Sign Service"; and Robert H. Perry, business specialist, United States Department of Commerce, Chicago, Illinois, "Business Trends".

The committee which planned the convention and exhibit consisted of: E. J. Schulenburg, Time-O-Matic Co.,

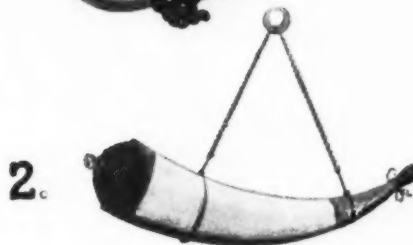
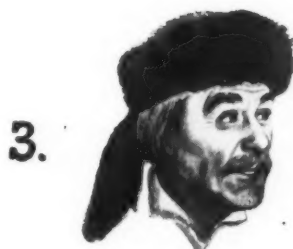
Danville, Illinois, chairman; T. F. Flannery, Jr., White Way Electric Sign Co., Chicago, Illinois; D. C. Mills, Federal Electric Co., Chicago, Illinois; F. C. O'Neill, Acme-Wiley Corporation, Chicago, Illinois; and H. S. Parker, Flashtrac-Neon, Chicago, Illinois.

Chicago Technical Conference and Production Show

"A Progress Report to the Nation" is the theme of the Chicago Technical Conference, to be held in conjunction with the Chicago Production Show, March 22, 23 and 24, at Hotel Stevens.

Ed Mackasek, managing director of the Porcelain Enamel Institute, and Dana Chase, editor of *finish*, will participate in a Conference panel session sponsored by the Chicago District Enamellers Club.

Miscellaneous information about the Conference and Show may be had by calling P. A. Jenkins, executive secretary, at Chicago. Phone HARrison 7238.



Match up the people and the horns

(It may mean money to you!)

THE FIRST THREE, of course, are very easy.

The sea captain (1) goes with Cape Horn (3); the musician (2) with the French horn (4); and the pioneer (3) with the powder horn (2).

That leaves the Average American (4) matched up with the Horn of Plenty (1).

As such an American, you'd like that

to be true, wouldn't you?

It can be—and will be—for millions of Americans who, today, are putting money regularly into U. S. Savings Bonds.

In ten years, as the Bonds mature, these millions will find that they have truly created a Horn of Plenty for themselves!

For they'll get back \$4.00 for every

\$3.00 they're putting in today!

There are now *two* easy, automatic ways to buy U. S. Savings Bonds regularly. The Payroll Savings Plan for men and women on payrolls; the Bond-A-Month Plan for those not on payrolls but who have a bank checking account.

Let U. S. Savings Bonds fill up your personal Horn of Plenty . . . for the years to come!

Automatic saving is sure saving—U. S. Savings Bonds

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.





...first step **TOWARD BETTER ENAMELING**

Hommel Frits, Powdered Clays, and Oxides. By using them, you'll quickly **SEE THE DIFFERENCE** in the quality of your finished products. You'll also see the difference in your cost.

For example, Hommel Frits eliminate warpage, minimize rejects, better the quality, improve thermal shock resistance and reduce shop cost.

Your customers, too, will **NOTE THE IMPROVEMENT** — the smooth finish, the rich gloss, the flawless surface.

And the ultimate consumer will appreciate the durability, the extreme resistance to abrasion . . . to mechanical and thermal shock . . . to organic and mineral acids.

Results — better satisfaction all around.

All of this is no idle boast — but an accomplished fact, attested to by hundreds of enamellers who have taken this forward step.

Call Hommel Service Engineers for practical suggestions. No matter how minor nor how big your problem, write, wire, or phone. Today!



Laboratory Controlled Production of Ceramic Supplies

- FRIT for Steel, Cast Iron or Pottery
- CERAMIC COLORS
- CHEMICALS
- BRONZE POWDERS
- METAL POWDERS
- SUPPLIES
- EQUIPMENT

Our Technical Staff and Samples are available to you without obligation. Let us help you with your problems.

World's Most Complete Ceramic Supplier

ciety to the Institute of Industrial Engineers and Electrochemists, the Industrial Manufacturers Society and the Society for the Advancement of Metallurgy.

NEWS

V. A. Barlow's Pottery and Enamel Company announces the addition of Charles H. Becht to the organization. Mr. Becht (left) to be introduced.

Electret is exhibited by...
number 104-1046 filters a...
FBI Circular 1929, and...
in a permanent, hinged-to...
box.

Edwards' Southern for...
bold bulldozing...

In the general review...
new "Marshall" factory...
Pennsylvania, Edwards'...
plant a complete new...
1000 long by 1100 wide.

According to company...
the new bulldozing...
equipped with an...
for...
products.

Conference on surface reactions

The Pittsburgh International Conference on Surface Reactions will be held at the Mellon Institute for Industrial Research in Pittsburgh, Pa., June 7-11.

Preliminary plans call for technical sessions in the mornings and evenings, with visits to Pittsburgh research laboratories, which are working on surface reactions, in the afternoons.

New board of directors at Vitro Manufacturing

Announcement of a new board of directors, elected at a special December meeting, has been made by A. J. Strod, president, The Vitro Manufacturing Company, Corliss Station, Pittsburgh, Pa.

Members of the new board are as follows: J. O. Ekblom, New York financier; M. H. Ewing, partner of the law firm of Moorhead and Knox; W. F. Rockwell, Jr., president, Rockwell Manufacturing Co.; J. I. Gearhart, business representative, Hicks interests; and Strod, who will continue as president. Rockwell was elected vice president, and Ewing, secretary.

The firm was incorporated in 1909, and since 1929 has operated two plants, one at Corliss Station, and the other at Canonsburg, Pa. The former plant is confined to the manufacture of ceramic colors and chemical specialties. The Canonsburg plant, located on an 18-acre site, is currently being expanded for a chemical operation.

The new board has already formulated plans for further increasing plant facilities and expansion of markets, according to Strod.

Shroll to Roberts & Mander



Ivan Shroll has joined the organization of Roberts & Mander Corporation, Hatboro, Pa., as enamel plant superintendent, according to a recent report.

Before joining Roberts & Mander, Shroll was associated with Geuder, Paeschke & Frey Co., Milwaukee, Wis., from 1945 to 1947, as enamel plant superintendent and general superintendent. Prior to that he was night superintendent and industrial engineer at Benjamin Electric Co., Des Plaines, Ill.; superintendent of enamel plant, Round Oak Co., Dowagiac, Michigan; and foreman, Norge Corporation, Muskegon Heights, Michigan.

George Fletcher dies

George B. Fletcher, Chicago representative and long-time associate of The Cambridge Wire Cloth Company, Cambridge, Maryland, died in December.

Archie Johnston to Ingersoll Steel

It has been announced that Archie Johnston recently joined the Ingersoll Steel Division of Borg-Warner Corporation, Chicago, to work in the enamel shop. He formerly was connected with Samuel Stamping & Enameling Company, Chattanooga, Tenn., as a ceramic engineer. Johnston is a graduate of Georgia Tech.

U. S. Steel appointment

The appointment of M. W. Reed as chief engineer, United States Steel Corporation of Delaware, has been announced by B. H. Lawrence, vice president of engineering. Reed, who has served with U. S. Steel subsidiaries continuously since 1916, has been vice president—engineering, Carnegie-Illinois Steel Corporation, since April, 1947.

Titanium prices increased by DuPont

An increase in the price of titanium pigments, effective as of January 1, has been announced by the DuPont Company. A company report said that increases in all phases of production costs necessitated the price advance.

The price of titanium dioxide pigment, anatase grades, was increased from 16½¢ a pound to 17½¢, and rutile grades from 18½¢ a pound to 19½¢. At the same time, the price of titanium calcium pigment was increased from 6¼¢ to 6¾¢ per pound.

"Lennig" now division of Rohm & Haas

One of the oldest names in the chemical industry has passed into history with the announcement by Rohm & Haas Company, Philadelphia, that its associate firm, Charles Lennig & Company, Inc., is being dis-

solved as a separate corporation. It was announced, however, that business would be continued without change under the name of the Lennig Division of the Rohm & Haas Company.

Rohm & Haas acquired control of the Lennig Company in 1920 when the plant was sold to settle the estate of John B. Lennig, grandson of Charles Lennig, who founded the company bearing his name in Phil-

adelphia in 1819 as a chemical importing firm. As an associate firm of Rohm & Haas, the Lennig Company manufactured heavy chemicals. New chemicals, notably the methylamines, were added to the line of products.

Chemical products now being manufactured and sold under the Lennig name will continue to be available from the Lennig Division of Rohm & Haas.

products, a major phase of the company's modernization and expansion program, according to the report.

Promotions at Detrex



W. F. Newbery, formerly industrial sales manager, has been appointed assistant director of sales of Detrex Corporation, Detroit, according to an announcement by W. W. Davidson, vice president and director of sales.

Directly reporting to Newbery will be LeRoy Camel, new sales manager, Industrial Products Division, including metal cleaning equipment and chemicals (See December, 1946, *finish*, "Automatic Cleaning and Pickling Prior to Porcelain Enameling"); H. S. Tweedy, industrial service manager; H. J. Lucey, oil-extraction and export sales manager; and G. W. Walter, advertising and sales promotion manager.

Canadian ceramic convention at Niagara Falls, Ontario February 9, 10 and 11

At the 46th Annual Convention of the Canadian Ceramic Society, to be held at Niagara Falls, Ontario, February 9-11, several staff members of United States colleges will present papers.

The college staff members include the following: Professor John F. McMahon, acting head, Department of Research, New York State College, Alfred, N. Y.; George Kirkendale, New York State College; Dr. E. C.

Finish editor appointed membership representative for the Porcelain Enamel Institute

The Board of Trustees of the Porcelain Enamel Institute, at a recent meeting in Cincinnati, followed the suggestion of the PEI executive committee at an earlier meeting in Pittsburgh and appointed Dana Chase, editor and publisher of *finish*, as membership representative to head an aggressive membership campaign for the year 1948.

One of the principal objectives of the campaign will be the development of a strong associate membership group. PEI memberships were formerly classified as (1) active, consisting of plants making porcelain enameled products, and (2) cooperating, consisting of suppliers of material and equipment. The third, or associate classification, covering the so-called "captive" plants, will include companies such as the appliance producers who manufacture finished products and whose porcelain enameling facilities form a part of their complete production activity.

With the great expansion in porcelain enameling facilities by finished product manufacturers, the percentage of the total output of porcelain enameled metal coming from these "captive" facilities is extremely high. In broadening the scope of the Porcelain Enamel Institute to include

these plants, the Institute will not only be spreading the benefits of its co-operative activity to a greater number of enameling plants, but will increase its effectiveness to all members through the cooperative activity of the associate group.

In commenting on the action taken by the Institute in encouraging membership of captive plants, C. D. Clawson, President, Ferro Enamel Corporation, Cleveland, Ohio, recently elected Institute president, said:

"The past presidents, officers and working committees of the Porcelain Enamel Institute have done a most effective job in building up an organization and program of unquestioned benefit to the technical and plant organizations and to sales and management in all plants where porcelain enameling is done. Our prime purpose for 1948 will be to expand these benefits and the number of companies to which they accrue by carrying out an effective membership campaign to welcome those companies who have not formerly been included in our membership classification but who have an important stake in the industry as a result of large investments in plant equipment and organization personnel."

New Carborundum research physicist

Charles B. Proudfoot, formerly assistant director of the engineering and physics division of Fredric Flader, Inc., has been engaged by The

Carborundum Company as senior research engineer in physics at the firm's research and development laboratory, Niagara Falls, N. Y. He will have charge of the development of new and improved processes and

Henry, chief, Ceramic Department, Pennsylvania State College, State College, Pa.; and Dr. J. H. Koenig (or

representative), Rutgers University, School of Ceramics, New Brunswick, N. J.

Pemco employees honored at service society dinner



Eighty members and guests of the Pemco Honor Service Society met at the Sheraton-Belvedere Hotel, Baltimore, Md., recently to hold their tenth annual dinner and to pay tribute to those employees of Pemco who have been with the company ten or more continuous years. Fifty-two members of the Society, representing more than 1,000 years of service, were present.

Among the guests were the board of directors, officials of the company, and the son of Pemco's Norwegian representative.

Chester Stackpole, merchandising manager, Consolidated Gas & Electric Power Co., Baltimore, officiated as toastmaster, and W. R. Greer, vice president of Pemco, presided as master of ceremonies. Richard Turk, president of Pemco, praised the Society members. He said that it was greatly due to their loyalty and

efforts that the company had taken its place among world distributors and expanded from a small second story room on Eden Street to the world's largest porcelain enamel manufacturing plant.

Herbert Turk, executive vice president of Pemco, received a gold engraved watch upon completion of 25 years of service. After service Society keys were presented to members, three new members were initiated. Each member was then presented with an engraved copy of "The History of the Pemco Honor Service Society," which was published specially for the meeting.

Philip Dietz, the oldest man with the company in years of service, presented an engraved bronze combination barometer and clock to Karl Turk, Sr., Pemco's founder, past president, and now chairman of the board.

Pressed Metal Institute speaks its piece

Members of the Pressed Metal Institute and the stamping industry generally cannot today secure from the steel mills and warehouses adequate sheet and strip steel to meet the demand for stampings used in end products needed by the consumer,

according to Tom J. Smith, Jr., president, speaking before an Institute meeting in Cleveland.

New Orleans firm to build heaters

It is reported that Inland Steel Container Company, New Orleans, La., has completed a new space heater

plant which will turn out 1,000 units a day at peak operation.

The plant, said to be the only one of its kind in the city, will manufacture space heaters from rough steel and iron to the finished product, according to Norman D. Rice, sales manager.

ASTE industrial exposition in Cleveland, March 15-19

Tool engineers and production executives throughout the nation, Canada, and foreign countries will attend the American Society of Tool Engineers' 6th Industrial Exposition, March 15-19, to gain knowledge of the latest methods and devices developed to aid industrial production, both from the exhibits and from the technical sessions and plant tours which will make up the convention program, according to Harry E. Conrad, executive secretary.

The Exposition will be held in the Public Auditorium in Cleveland in conjunction with the 16th annual Convention of ASTE.

Perfection vice president retires



John C. Wallace retired December 31 as vice president and director of sales for Perfection Stove Company, Cleveland, Ohio, the company has announced.

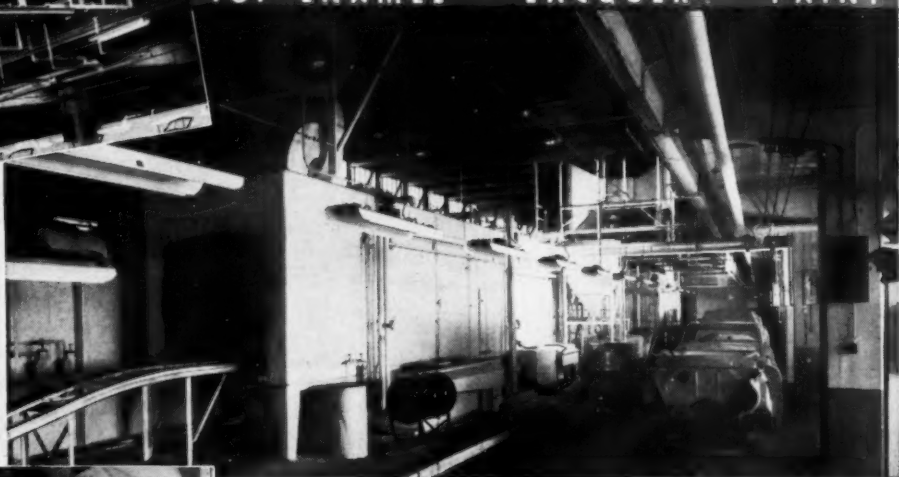
A graduate of Dartmouth College in 1907, Wallace joined Perfection when the organization was known as Cleveland Foundry Company, in April, 1914. He organized the com-

COMPLETE *Finishing* SYSTEMS

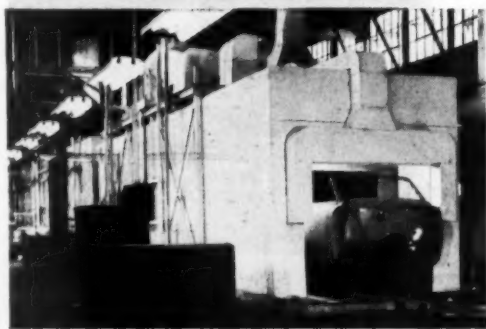
for ENAMEL • LACQUER • PAINT



Above: Typical Mahon Filtered Air Supply Units. These Units Supply Clean Filtered Air to the Spray Rooms at Studebaker. At Right: Mahon Metal Cleaning and Rust Proofing Equipment—Part of the Studebaker Installation.



Studebaker Bodies Receiving their Fine Finish in Mahon Hydro-Filter Spray Booths.



Studebaker Bodies Emerging from Mahon Tunnel-Type Drying Ovens.

Another Complete Mahon System Installed at Studebaker

Illustrations here show major units of a new Complete Finishing System installed by Mahon at Studebaker's South Bend Plant to handle finishing production of new convertible bodies. In the automotive field, as well as the household appliance field, metal furniture field, and many others where fine finishes are imperative, Mahon Finishing Systems predominate. Manufacturers with finishing problems turn naturally to Mahon for equipment to produce the finest finishes . . . they do so because they know that twenty-seven years of experience in this highly specialized field, supplemented by constant research and pioneering development, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available elsewhere. See Mahon's Insert in Sweet's Mechanical Industries File, or, if you are contemplating new finishing equipment in the near future, arrange consultation with Mahon engineers today.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems including: Metal Cleaning Machines, Rustproofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, and Drying and Baking Ovens. Also Paint Reclaiming Units, Hydro-Foam Dust Collectors, and many other Units of Production Equipment.

MAHON

pany's first sales department and placed its first national advertising. A member of board of directors

since 1917, Wallace will continue as a board member, also as a member of the executive committee.

Ceramic Association of New Jersey annual meeting

Danielson elected president

Approximately 200 persons attended the 34th annual meeting of the Ceramic Association of New Jersey, held at Rutgers University, New Brunswick, N. J. The reading of four technical papers highlighted the all-day meeting.

Ralph R. Danielson, director of ceramic service, Metal & Thermit Corporation, Carteret, N. J., was elected president of the Association, succeeding Vernon B. Case, Paper Makers Importing Co.

Other officers elected include Samuel J. McDowell, American Lava Corp., Philadelphia, vice president; August Staudt, Perth Amboy, N. J., councillor; J. H. Koenig, Rutgers University, secretary-treasurer; and Emma L. Nawrot, Rutgers University, assistant secretary.

G. Bickley Remmey, director of research, Richard C. Remmey Son Co., Philadelphia, discussed "Upper Limits of Usefulness of Commercial Super Refractories." Remmey stated that 18 different brands of fabricated mullite and alumina refractories, plus one zircon and one zirconia brick, were tested to determine their upper limits of use. Reheat tests were run at 3100°, 3200°, 3300°, 3350°, 3400°, and 3500° F., the temperature being held in each case for four hours. The results on load test and P.C.E. tests were given. Samples included the most recently developed refractories of the kind. The results showed a wide difference between the newer mullite bonded mullite refractories and the conventional mullite bricks. It was indicated that the 99% alumina refractories are superior to the conventional clay bonded alumina bricks. The better mullite refractories were said to stand a higher temperature than the conventional clay bonded alumina bricks.

"Applications for Recently Developed Refractory Porcelains" was the topic of R. F. Geller, chief, Porcelain

and Pottery Section, National Bureau of Standards, Washington, D. C. Geller summarized the development of armaments, emphasizing the part ceramics is being called upon to play in modern armaments. Conditions of temperature and stress in power plants such as the rocket, the ram-jet,



R. R. Danielson

and the turbo-jet were described, and requirements to be met by both ceramic coatings for metals and by all-ceramic parts such as turbine blades were illustrated.

G. H. Spencer-Strong, Pemco Corporation, discussed "Recent Developments in the Porcelain Enameling Field." In his paper, Dr. Spencer-Strong pointed out the developments in metal cleaning, materials handling, enamel application and firing, and presented the evolution of the modern porcelain enameling plant from an operation utilizing chiefly manual skill to the highly conveyorized mass production of today. The evolution of porcelain enamel composition during the past 30 years, as regards materials, was noted, and the most recent developments in the high opaque zirconium-titania opacified enamels were described in detail. Dr. Spencer-

Strong also described developments in enamel application direct to metal at low temperature.

"Modern Clay Concepts and Casting Slips," by Girard W. Phelps, technical director, United Clay Mines Corp., Trenton, N. J., was the last paper read at the meeting. In his talk, Phelps pointed out that a knowledge of fundamental properties is essential to anticipation, recognition and correction of slip troubles.

AGA spring conference

The annual American Gas Association Sales Conference on Industrial and Commercial Gas will be held in Windsor, Ontario, Canada, April 7-9, according to Leon Ourusoff, chairman, AGA industrial and commercial gas section.

James McWhirter has been placed in charge of fluorine product process development and manufacture for Pennsylvania Salt Manufacturing Company, it was announced by Y. F. Harcastle, vice president in charge of manufacturing.

Titanium materials source leased by DuPont

A long-term lease of ilmenite-bearing lands has been signed with the State of Florida, the DuPont Company has announced.

This will provide a domestic supply of the ore and will end the company's dependence upon foreign sources, it is stated. Up to now, most of this raw material has been imported. Detailed studies are said to be under way for the installation of equipment for large scale mining operations.

Ilmenite is the black ore from which white titanium pigments are manufactured at plants in Baltimore, Maryland, and Edge Moor, Delaware.

Earl Shaner to address Eastern Enamelers at February meeting

Earl L. Shaner, editor-in-chief of *Steel* magazine and president of Penton Publishing Company, Cleveland, Ohio, will address the members and

guests of the Eastern Enamellers Club at their meeting at the Sylvania Hotel, Philadelphia, Pennsylvania, February 21.

Shaner recently returned to the United States after completing a trip around the world as a member of President Truman's United States Reparations Commission gathering first-hand information concerning metal-working from almost every point on the globe.

The title of his talk will be "The

Effect of World Developments on the Domestic Metalworking Industry." Although the talk will be general in scope, the announcement states the speaker will, nevertheless, confine certain portions of it directly to "steel" as it pertains to the porcelain enameling industry.

All individuals connected with the industry, particularly steel buyers and suppliers, are invited to attend this meeting.

Roper promotes key men

E. Carl Sorby, vice president and director, has announced the appointment of Norman C. Kreuter as sales manager and Pierre Vinet as director sales promotion of the gas range division of Geo. D. Roper Corporation, Rockford, Ill.

Associated with the Company since 1924, Kreuter came up through the



Pierre Vinet

ranks and has experience in all phases of the company's operations. He spent considerable time in his early years with Roper in production, production control, order and billing departments.

Vinet has been associated with the Roper organization as a member of the Rockford sales department for many years. In 1941 he was appointed assistant vice president. Under his supervision a complete sales control program for sales managers and retail salesmen was prepared and



N. C. Kreuter

put to use by many Roper dealers throughout the country. He has conducted sales training meetings from coast to coast.

ACS section news flashes

Pittsburgh Section of the American Ceramic Society has announced that Dr. Fitzhugh Marshall, member of the research staff of Westinghouse, will be the guest speaker for the Section's regular meeting, February 10, in the Mellon Institute Auditorium, Pittsburgh, Pa. Members and friends may make their reservations through Mr. N. Brandt, c/o Mellon Institute.

Northern Ohio Section meeting on February 5 will feature two speakers. LeRoy C. Werking, manager, chemical and metallurgical specialties department, Carbon Products Division, National Carbon Co., Inc., will talk on "Carbon as a Refractory". Harvey N. Barrett, Jr., manager of sales development, Basic Refractories, Inc.,

is scheduled to discuss "Trends in Development of Basic Refractories; Dead Burned Dolomite, Its History, Production and Use." The Section's annual election of officers will also be held.

Central Ohio Section's new officers are: Councillor, Dr. J. O. Everhart, Engineering Experiment Station, Ohio State University; Chairman, George Ford, Mosaic Tile Co., Zanesville, Ohio; Vice Chairman, Dr. A. C. Siefert, Owens-Corning Fiberglass Corp., Newark, Ohio; Secretary-Treasurer, Arnold E. Pavlish, Battelle Memorial Institute.

IBRM issues booklet on results of consumer advertising campaign

The Institute of Boiler and Radiator Manufacturers has issued a brochure, entitled "What's the Score to Date?", which reviews the achievements of the IBRM long-range consumer advertising campaign launched about a year ago.

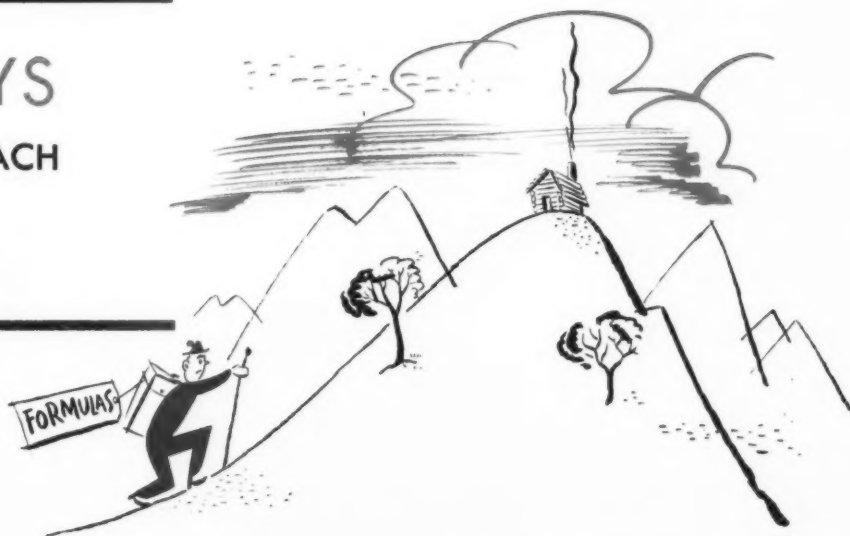
The booklet describes how the campaign is building up a waiting list of prospects for radiant heating by acquainting home planners with the benefits of radiant heating—whether by means of radiators, baseboards, panels, or convectors.

Ed Hansen to California



J. E. (Ed) Hansen, longtime director of technical service and assistant secretary of Ferro Enamel Corporation, Cleveland, Ohio, has been transferred to Los Angeles. There he will

2 WAYS TO APPROACH A COLOR PROBLEM



HIDE OUT IN A MOUNTAIN CABIN OR ASK DRAKENFELD TO HELP

YOU may never think of "hiding out" to concentrate on a porcelain enamel color problem. If you ever do, it's a cinch other work must go undone. It's costly, too.

We believe that you will profit by turning your color problems over to Drakenfeld technologists. We're rather proud of our record in serving the porcelain enamel industry these many, many years because we specialize in producing colors to meet individual requirements. Whether you produce signs or table tops, home, institutional or professional utensils and appliances, or manufacture architectural or industrial porcelain enameled products — we would like the opportunity of rolling up our sleeves for you.

Learn how Drakenfeld know-how and research facilities can assist you in stepping up production, cutting rejects, and boosting profits. Let us discuss your porcelain enamel color problems as soon as convenient. Write today.

DEPENDABLE SERVICE ON: Oxide Colors . . . Screening Paste . . . Graining Colors . . . Squeegee Oils and Mediums . . . Rotospray Sifters . . . Steveco Mills . . . Porcelain Grinding Balls . . . Porcelain Mill Linings.

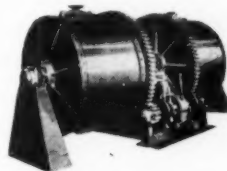


Rotospray — a millroom must!

The Rotospray helps you get properly prepared slip for the production line. Indispensable for "reconditioning" enamel slip. Equally valuable at ground coat dip tanks. Ideal for any job that requires speedy, positive sieving. Strains through a long-life vertical screen — no clogging. Standard and Junior sizes. Capacities range from 300 to 1,000 G.P.H., depending on nature and specific gravity of product, screen mesh and sifter size. Write for descriptive folder.

5 SAVINGS WITH STEVECO MILLS

Time
Labor
Horsepower
Floor Space
Initial Costs



Steveco high-efficiency duplex mills wet-grind porcelain enamel materials faster, better and at low cost. Many outstanding construction features proved in hard day-after-day service in many plants. Wide range of sizes and linings, with all types of drives. Write for catalog, then let us study your grinding needs and recommend the correct type for your requirements.

Drakenfeld



YOUR PARTNER IN SOLVING COLOR PROBLEMS

B. F. DRAKENFELD & Co., Inc. 45-47 Park Place, New York 7, N.Y.

Factory and Laboratories: Washington, Pa.

Pacific Coast Agents: Braun Corp., Los Angeles 21 . . . Braun-Knecht-Heimann Co., San Francisco 19

assume complete charge of Ferro's California manufacturing operations.

Ed joined Ferro in 1926 as a research engineer, and was advanced to assistant service director in 1932, and to service director in 1935. From 1926 to 1936 he directed a series of short courses for porcelain enamellers sponsored by Ferro.

He is well known in the enameling industry as a technical expert, author, and for his work with the American Ceramic Society and the Porcelain Enamel Institute. Among his writings are "Technique of Vitreous Enameling" and "Advanced Technique of Porcelain Enameling."

In 1938, Hansen had charge of Ferro's Little Red Schoolhouse on Wheels. By this method, visits were made to plants in the industry where lectures on porcelain enameling were given and movies shown to interested groups.

"A Manual of Porcelain Enameling," of which Hansen is editor and one of the principal contributors, contains papers by many of the industry's outstanding authorities, and is recognized as an important text in its field.

During World War II, he designed, built and managed the Powdered Metals Division of Ferro Enamel Corporation, Bedford, Ohio. Since the war, Hansen performed the dual role of director of technical service and editor of "The Enamelist."

Pennsalt announces changes in sales personnel

Three sales personnel changes in the Special Chemicals Division, Pennsylvania Salt Manufacturing Company, including the appointment of Albert H. Clem to a newly-created position as field sales supervisor, have been announced by Joseph J. Duffy, Jr., manager of sales.

Clem will supervise activities of district sales managers and all field men of the Division. A graduate of Pennsylvania State College with a degree in chemical engineering, he has been with Pennsalt since 1938.

Philip C. Staples, Jr., with the firm since 1937, will succeed Clem as product supervisor on cleaners and

pickling and descaling products. He is a graduate of Harvard University.

Succeeding Staples as product supervisor on corrosion-resistant prod-

ucts will be Robert R. Pierce, a graduate of Oregon State College with a degree in chemical engineering. He joined Pennsalt in 1941.

Camcar completes new screw products plant at Rockford



Photo shows Camcar plant with Bob Campbell, president, in insert.

Camcar Products Company, Rockford, Illinois, has announced the completion of its modern new one-story daylight plant for the manufacture of special and standard screw products.

"This unit," says Camcar's president, Bob Campbell, "is now in full production, and plans for extensive expansion are on the drawing board."

The new plant (45,000 square feet) was erected at a cost of approxi-

mately \$200,000 and equipped with new, modern, high speed cold upsetting and threading equipment, including automatic machinery for secondary operations, at an additional cost of \$500,000. The plant incorporates air conditioned wire storage rooms for humidity control.

President Bob and his brother, Frank Campbell, maintain executive and sales offices in Chicago's Palmolive Building, 919 North Michigan.

Hardwick challenges convention

On invitation from R. B. (Bob) Hurt, vice president of Hardwick Stove Company, your reporter journeyed to the 15th floor of the American Furniture Mart to view the company's "challenge" to conventional design in gas ranges.

Call it five years ahead and ten years behind—call it what you may—the Hardwick "Challenger" gas range has broken design precedent of the last few years in offering a high oven range to the modern housewife. The company also makes a complete line of table top ranges, but is making a strong bid for what they believe to be a big market for a range with more accessible oven.

Decision of the company to manufacture this type range is said to be based on consumer surveys. For large

installations, the company suggests combining two of the units—one each with right and left hand oven.

Store modernization show in New York City, July 6-10

The 2nd International Store Modernization Show will be held July 6-10, Grand Central Palace, New York City, John W. H. Evans, managing director, has announced.

The college competition for the "Shopping Center of the Future" among the architectural schools is again to be held in conjunction with the Show. The winning drawings and models of shopping centers, modernizing all types of retail stores, will be judged by a committee of the American Institute of Architects and out-

standing leaders in retailing. The best entries will be on exhibit for the first time at the Show.

Admission to the Show again will be by invitations which can be obtained from exhibitors or the Store Modernization Show, 40 East 49th Street, New York 17, N. Y.

Testimonial dinner for Richardson

In appreciation of Ernest Richardson's untiring efforts in the introduction and development of porcelain table tops for the dinette furniture manufacturing industry, a testimonial dinner for the retired president of Ingram-Richardson Mfg. Co., of Indiana, Inc. was scheduled for January 20 at the Waldorf-Astoria Hotel, New York City.

The appointment of Bay E. Estes, Jr., as director of commercial research, United States Steel Corporation of Delaware, was announced by David F. Austin, sales vice president.

Hugo Johnson to Battelle



Hugo E. Johnson, formerly research associate with Carnegie-Illinois Steel Corporation, has been appointed to the administrative staff of Battelle Institute, Columbus, Ohio, according to an announcement by Clyde Williams, director of the Institute.

Johnson previously has been associated with Youngstown Sheet and Tube, Carnegie Steel, Battelle Institute, and for the past seven years with the research and development

division of Carnegie-Illinois, in Pittsburgh. During his former service with Battelle, he was engaged as an engineer in metallurgical research.

New government policy on patents owned by seized corporations

Attorney General Tom C. Clark has announced that the Office of Alien Property, Department of Justice, will make available to American industry generally a large number of

patents now held by corporations in which the government has seized a controlling stock interest under the Trading with the Enemy Act. Mr. Clark estimated that the program will affect over 6,000 patents owned by 25 corporations.

R&M shows new 1948 ranges

The new 1948 "Quality" electric range line, combining the latest auto-

to Page 64 →

Filter All Plating Solutions Faster, More Completely in

SPARKLER Horizontal Plate FILTERS

Because the filter cake is held horizontally, it is absolutely stable to the end of each filtering cycle. And cycles are longer because the cake retains its porosity longer. That is why the "horizontal principle," as embodied in Sparkler filters, gives you more efficient, low

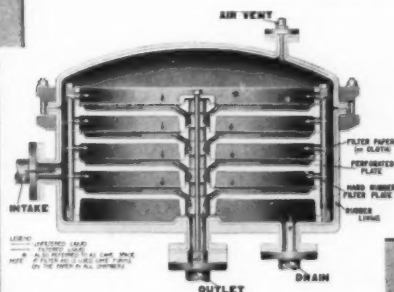
cost, operation. Sparkler filters are pressure-tight and leak-proof, designed for intermittent or continuous operation.

4 Plating Solution Types

1. Rubber-lined for bright nickel
2. Stainless steel for acids
3. All Iron for alkaline solutions
4. All Steel (with Stainless Pump) for chromium

SPARKLER MANUFACTURING CO.

Mundelein, Illinois



Made in Capacities
60 to 10,000 G.P.H.

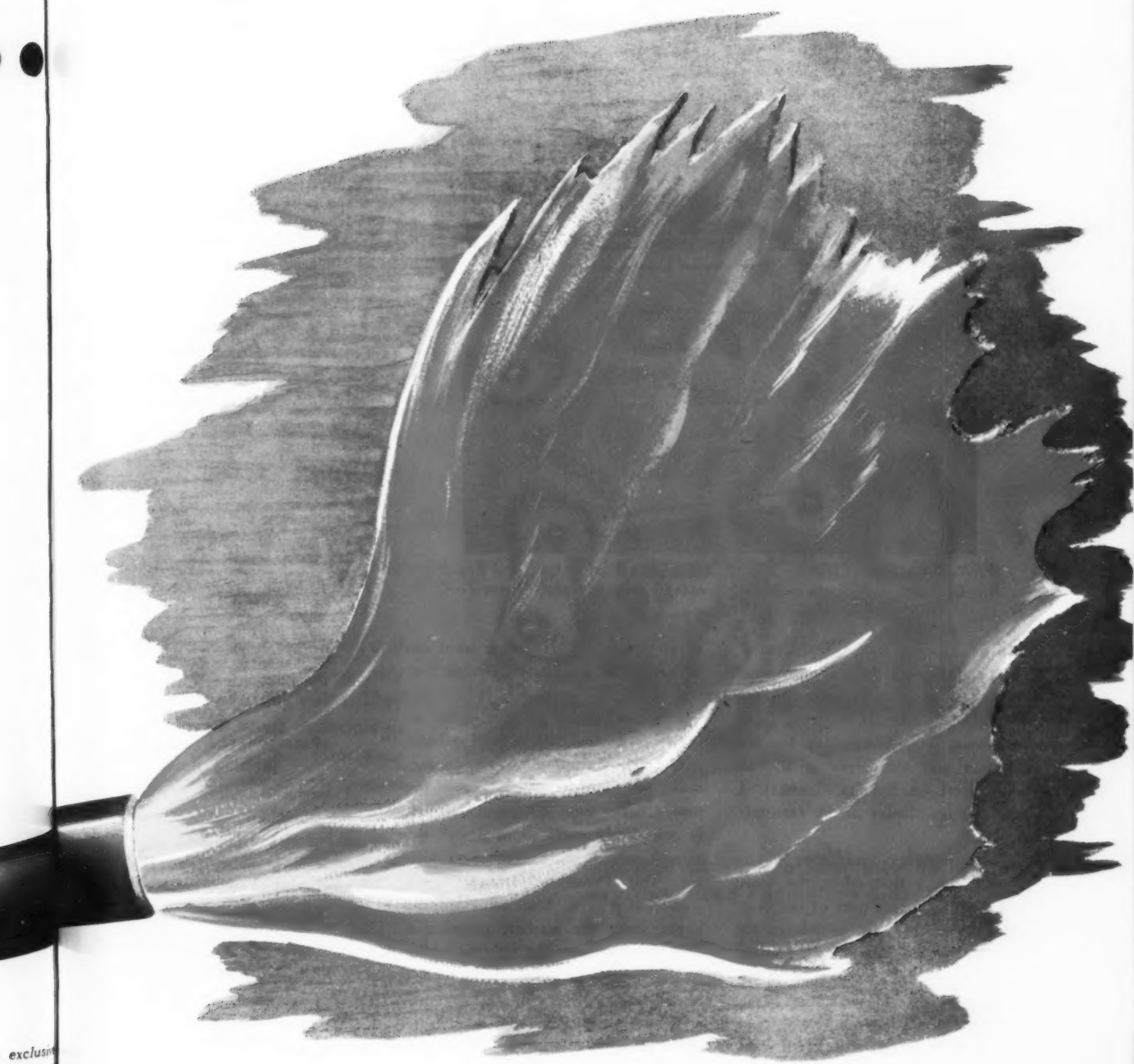
See your supplier or
Write for details

Our Engineering Service is available for any specialized problems.

man size pilot light...

Like moths attracted to a flame, frit, for gleaming white cover coats and tough dark ground coats flow from Pemco's and the industry's **ONLY WHOLLY CONTINUOUS SMELTERS*** toward drying burners fathered by these man sized pilot lights. They are a definite and tremendously important factor in producing the "World's Finest" porcelain enamel frit. They are the silent guardians that assure uninterrupted production by guarding against unburnt gases. They speed up the handling of frit from smelter to bag and simplify the control of the large drying burners. They illustrate Pemco's infinite attention to good engineering in making a better and more **CONSISTENTLY UNIFORM** product for the porcelain enameling industry—Truly an indication that Pemco is designed for greater service to you.

**Continuous smelting . . . an exclusive PEMCO process . . . is the only sure method of producing ground or cover coat—in commercial quantities—frits of positive uniformity. Pemco Continuous Smelters Patents Reg. in U. S. Pat. Office Nos. 2323930—2262029—2262070—2248877—2137931—2137930*



exclusive
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or cover
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PEMCO CORPORATION

Baltimore 24,  Maryland

Always Begin With a Good Finish

→ from Page 61

matic cooking and styling features, was shown December 30 by Roberts & Mander Corporation, Hatboro, Pa., at a preview in the firm's New York sales rooms.

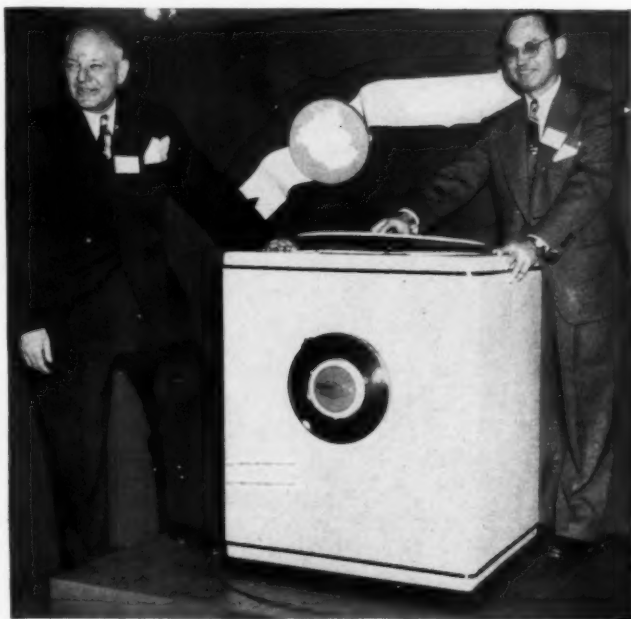
Four models were displayed in advance to their introduction to the

general trade in the Winter Furniture Market, Chicago. The line includes two all-electric ranges, and two combination kitchen heating ranges in which the cooking is done by electricity and the heating by coal or wood, or by oil.

been appointed vice president and assistant to the president of Philco Corporation to assist in over-all direction of the firm's activities, according to an announcement by John Ballantyne, president.

It was also announced that James H. Carmine, formerly vice president in charge of merchandising, has been named vice president in charge of distribution and in this newly created position will be responsible for all Philco sales, merchandising and advertising activities.

An Automatic washer that's not automatic



W. Neal Gallagher, left, president, Automatic Washer Co., and Frank Breckenridge, vice president, engineering, show off the "Press-Toe" washer.

What appears to be a contradictory heading is, in fact, a description of the new washers presented by the Automatic Washer Company, Newton, Iowa, at a pre-showing for distributors and the press at the La Salle Hotel on Sunday, January 4, and later on display at the furniture market.

The apparent contradiction comes from the fact that while the word "Automatic" forms part of the company name, the new models in the 1948 Automatic line are all conventional type washers, indicating the company's policy of continuing in the conventional washer market.

Two unusually well designed models were shown which may set a new style trend for the conventional type unit. One was a duo-spin extractor model, re-styled throughout. The unit incorporates a 7-pound porcelain enameled tub and a spin-dry unit for

damp drying. A new flush front has an unusually attractive circular control panel.

The new model given greatest attention was the "Press-Toe" cabinet model. From all outward appearances the washer might be one of the new cabinet type automatics, for it is completely enclosed in a well designed cabinet with no wringer visible. The "Press-Toe" feature means just what it says. After removing the cover from the washer, pressing a foot pedal releases the wringer which automatically rises to working level above the washer tub. Automatic expects that this newest innovation in the conventional washer field will establish a new trend in design.

Philco advances sales executives

Thomas A. Kennally, formerly vice president in charge of sales, has

Packaging exposition set for Cleveland, April 26-30

The American Management Association has announced that its 17th Packaging Exposition, largest in the history of the event, will be held April 26-30 in the Public Auditorium, Cleveland, Ohio.

Approximately 200 exhibitors will utilize 100,000 square feet to display developments in packaging, packing and shipping machinery, equipment, materials, design and services which are used in the manufacture and sale of virtually every product in the nation's commerce, according to Alvin E. Dodd, AMA president. The annual three-day AMA Conference on Packaging, Packing and Shipping will also be held in the Cleveland Auditorium, April 27-29, concurrent with the Exposition.

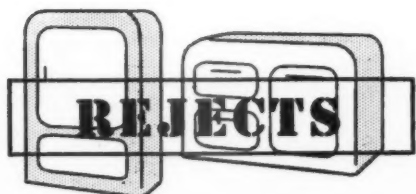
Paterson, N.J., has new jobbing plant

Paterson Porcelain Products, Inc., is the name of a new porcelain enamel jobbing plant located at 98-100 Maryland Avenue, Paterson, New Jersey.

Weaver elected director of Ohio Chamber of Commerce

At the annual banquet of the Ohio Chamber of Commerce, R. A. Weaver, Chairman of the Board of Ferro Enamel Corporation, was elected a director of the organization. Among other prominent members are men well known to the enameling field, including Earle Smith, president of
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STOP



IN YOUR

PICKLE ROOM

WITH INDUSTRIAL PRESSURE FILTERS

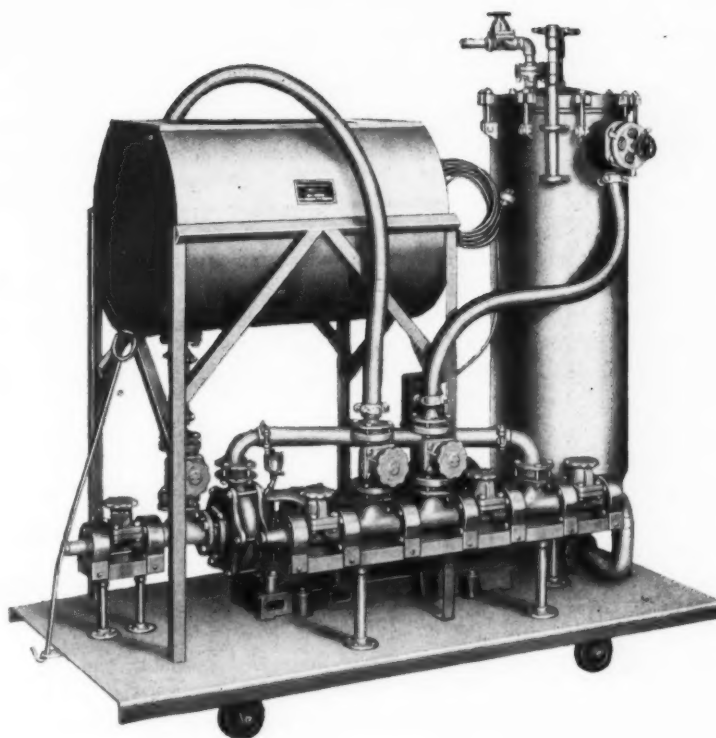
Leading enameling plants who have been using Industrial filters to purify their pickling solutions know the real meaning of efficient operation.

Pickling solutions must be purified to avoid the costly rejects that surely follow neglect of this important step in the preparation of metal for enameling.

Modern production methods are so streamlined that only the most dependable filters are economical to operate.

Industrial filters have been tried and proven in the enameling industry over a period of many years. They are built of the finest materials to serve their owners year after year without loss of production due to failure.

The use of Industrial pressure filters will enable you to operate your pickle room in the most efficient manner because they keep solutions pure all the time.



Illustrated above is a filter used by average sized enameling plants.

Let us recommend the proper equipment to operate your pickle room efficiently.

INDUSTRIAL FILTER & PUMP MFG CO.

1621-39 WEST CARROLL AVENUE CHICAGO 12, ILLINOIS

Progress in the development of "low temperature" porcelain enamels

(Continued from Page 26)

used, greater oxidation would ensue, and the effective white layer (which controls the opacity obtained) would be thinner.

Why 1300° F. enamels?

In the first place, those so far developed happen to work on the lowest priced flat rolled steel product available in quantities today. Secondly, they offer a saving to the enamelers in many ways. Thirdly, they come the nearest to answering the challenge of outside competition to the porcelain finishing field.

In fact, these new 1300° F. enamels should not be regarded as competition within our own industry but as a new finish developed to meet the challenge of special organic finishes which are steadily encroaching upon the field once served by porcelain enamel. A notable example of this is the refrigerator exterior. At one time 50 per cent of the exteriors were finished in porcelain, today an average figure would be less than 10 per cent.

With organic finishes coming up in the service temperature range, we

must go down to meet them. If 1300° F. enamels do not meet the challenge, then perhaps 1200° F. or 1100° F. enamels would, even if we have to go to lead-bearing compositions.

It must be remembered that "the 1300° F. enamel" is still an infant and, we believe, will find many uses not now included in the porcelain enamel finish field. We believe that higher opacities are possible, that better weather-resistant compositions are possible, that even AR compositions are possible as a single coat at 1300° F.

The job to be done is not one of individual effort, but a cooperative effort. Steel makers, frit makers, and enamelers should contribute to the undertaking along their special lines.

The goal is well worth the effort because (1) it tends to combat outside competition, and (2) it tends to extend the usefulness of vitreous coatings to new fields.

Adapted for finish from a paper presented before the Central District Enamelers Club in Cleveland, Ohio.

Give signs their proper place in the advertising picture

(Continued from Page 29)

dow signs, or other types of window signs.

The sign industry has done a good job of producing the "parts" as regards variety, quantity and quality. During the past two years, under severe handicaps, it has done a remarkable job in production, and deserves a great deal more commendation and respect than it is getting. But as long as the industry continues to be a group of *parts* manufacturers, it cannot hope to have the prestige that is enjoyed by other forms of advertising. Signs will not appear on advertising budgets as a major media (along with direct mail, radio, newspaper and magazine advertising, and outdoor advertising) until the industry undertakes to teach

organized assembly and use of the parts. So far, most of this effort has been made by the customer, as in the case with people like Coca-Cola and petroleum companies (notably Shell, Texaco, Sun Oil and certain Standard Oil units).

Sign manufacturers have often made the statement that they must produce what the customer wants, and

San Francisco landmark

has new porcelain enameled face

(Continued from Page 21)

The seven-story building has a 90-foot frontage and a total surface area of 6,000 square feet.

Instead of the incongruity of displaying household wares for the mod-

ern home in a setting reminiscent of Barbary Coast days, Dohrmann's is showing home appliances (some of them porcelain enameled), home furnishings and gadgets of the machine

From "parts" producers to authorities on signs

A good tonic for the industry would be for its leaders to become alert in this field and to do everything possible to get all members to plagiarize freely. Thus the industry would have a common voice to develop strength and prestige, and win the respect of customers. Then sign people will cease to be fabricators or merely parts producers; they will become authorities on the use of the sign. But until the sign industry becomes professional in its endeavors and acquires a full comprehension of the responsibilities of the sign in the general advertising program, it will continue to take a back seat in media importance. Until it becomes a teacher and collectively acquires and disburses professional knowledge about the use of the sign, it will remain a "bush league" industry.

Members of the porcelain enameling industry should be regarded as more than a source for "lifetime finish." They should be a source of good counsel. Identification programs should be as enduring and practical as the lifetime finish.

Adapted for finish from a talk before the Porcelain Enamel Institute First Sales and Management Conference.



REDUCE *Operating Costs*

THE Ceramic Spray Booth illustrated is installed in the plant of a leader in the refrigerator field.

Exhaust air is being recirculated back in the plant area.

High efficiency of "Hydro-Whirl" water-washed spray booths makes this saving of heat loss possible as well as eliminating a nuisance hazard to your neighbors.

RETURN COUPON

PETERS-DALTON, INC.
17924 Ryan Road, Detroit 12, Mich.

GENTLEMEN:

- ☐ Please have a representative call
- ☐ Please send your latest literature

We are interested in:

- ☐ A complete finishing system
- ☐ Metal parts washers
- ☐ Paint spray booths
- ☐ Drying and baking ovens

Signed _____ Company _____

Address _____

WASHERS

SPRAY BOOTHS • DRIERS



PETERS-DALTON *Incorporated*

17924 RYAN ROAD • DETROIT 12, MICHIGAN

age against a background that by implication suggests modernization to the home owner. That fact makes the merchandising of the store the more effective.

In addition, the owners have a building front that advertises itself by night and by day, shining across the famous Square that is usually the first landmark for visitors. Inciden-

tally, this is the second spectacular porcelain enamel remodeling job to be done on this street. At the corner is the Southern Pacific's ticket office for the Streamliner, Challenger, and other trains. This building was refaced with porcelain enameled sheets shortly before the war, and looks as new as ever.

Will gas appliances be obsolete within the next twenty-five years?

(Continued from Page 33)

in direct proportion to the heating value of the gas distributed providing the specific gravity is held constant. This flexibility of natural gas is also available in a lesser degree with propane, butane of high Btu oil gas. The experiences of manufactured gas companies in the middle west, in utilizing natural gas to upgrade coke oven and water gas to 600 and 800 Btu for distribution, has clearly demonstrated the advantages in the use of higher heat value gases in increasing the thermal capacity of the distribution system and in lowering distribution costs per therm.

Advantages of higher heating value gases

Within the past three months the marked advantages of higher heating value gas on distribution costs have been further emphasized in the action of a New England gas company in making high Btu oil gas for production and distribution. In every case, employment of the higher heating value gases has resulted in increased gas sales, increased flexibility and in an extension of gas service to the public. These extensions will not be complete nor will the gas industry's problems be solved until every customer has been supplied all of the gas service which he desires without any restriction other than price.

While the eventual source of gas will be in solid fuel, the gains which have been made by the gas industry through the employment of higher heating gases, either natural or produced from liquefied petroleum products or petroleum fractions, will be retained for many years.

The current advocates of coal as a raw material for both oil and gas production believe that our oil resources are adequate for twenty years on the basis of present day consumption. These estimates all come from outside the gas industry as, in a majority of instances, the gas utilities do not own the sources of their own raw materials but are dependent upon producers of natural gas and petroleum, or both.

Refineries can extend our petroleum resources

The largest consumers of petroleum and liquefied petroleum products are the large refinery companies who control the major production of oil within the United States, and with this production, the production of substantial quantities of natural gas. These same companies have the opportunity to extend our petroleum resources through improved refinery practices and through the importation of crude petroleum. With substantial investments already made in the Saudi-Arabian oil fields with estimated reserves of some 20 billion barrels, it would appear that through importation of crude oil our resources could be extended an appreciable amount of time beyond the twenty years now estimated. The cost of importation of oil from this large pool is potentially less than the cost of East Texas crude in New York or of Kettleman Hills crude in Los Angeles. The withdrawal of oil from this great middle east pool would be extremely helpful to world peace and to American prosperity as it would permit simultaneously the conserva-

tion of our own petroleum resources and at the same time remove a source of strategic raw material which may lead to war.

Import oil for underground storage

It would not be too fantastic to propose that large quantities of this oil be brought into this country and stored underground, if necessary, as a strategic reserve along with other strategic materials which are being impounded against the next national emergency. This importation and storage would extend our reserves to well beyond the economic life of present day gas plant investments. The gas industry should not become discouraged by the threatened oil shortage, but should continue its present high successful efforts to extend its service to the public.

With the eventuality that both oil and gas will have to be produced from solid fuel within the next fifty years, it would appear that oil companies and gas companies should consider how to work along with one another so as to conserve the raw materials and the investments of each.

More and more gas companies are becoming large purchasers of gas, and are producing smaller and smaller increments of their total sendouts. These companies have become marketers or distributors of gas serving the general public, and have filled in a very essential part in taking gas from near its source and delivering it to the ultimate consumer.

Converting coal to oil and gas

Testimony has been presented on a number of occasions to point out that the technology of converting coal to oil and gas is perfectly feasible, and that it would be possible to operate a coal conversion plant so as to emphasize gas production in the winter months when the demand for gasoline is relatively low and emphasize gasoline production in the summer when the demand for gas is relatively low. There is sufficient coal available to last many years, as is shown in Table III. This is a very logical development and has a distinct appeal to technical and scientific men, but the process has not demonstrated its

PORCELAIN ENAMELING

Capacity Available

Have two continuous furnaces available for eight hours each day. Also, have ground coat line and Binks automatic white spray line open at the same time. Plant is totally conveyorized.

Can handle stove parts, table tops, and similar ware. Also, washing machine tubs, small bathroom sinks, heaters, hydrator pans, inner and outer roaster wells, reflectors, etc.

Address:

THE CLEVELAND CO-OPERATIVE STOVE CO.

Plant No. 3, Vitreous Enameling Division
2323 East 67th St., Cleveland 4, Ohio

MASSEY-HARRIS, LTD.

Chooses

BURDETT

(The Original)

**INFRA-RED
GAS
BURNER**

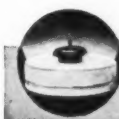
DRY
4 COMBINES
PER HOUR



Recently praised by Fortune Magazine for its extraordinary efficiency, Massey-Harris, Ltd., Toronto, has now installed two Salem Engineering ovens equipped with Burdett Infra-Red Burners, thus joining thousands who know . . . Burdett Infra-Red Burners save from 33 1/3% to 76% drying time.

This oven is 60' x 15' x 15 1/2', drying 4 combines, approximately 33,200 lbs. of steel, per hour at 190° F.

Floor conveyor speed is 1.7 feet per minute. These revolutionary results can apply to your drying, baking, cooking and similar processes. Ask for complete data.



3401 West Madison Street, Chicago 24, Illinois

BURDETT MANUFACTURING CO.
INFRA-RED GAS BURNERS

**FOR IRON-FREE
SLIP AND GLAZE**

DINGS High Intensity De-Ironer removes iron particles in ONE PASS!

Available in two models—open gravity or closed pressure types. Long life, corrosive-free grids. Gravity model contains float valve to keep De-Ironer at full capacity giving best separation at all times. . . Solenoid valve seals discharge opening when current is turned off. . . Pressure model can be fed through top or bottom. . . Easily installed either at discharge of gravity feed or directly in pipe line. . . Quick deliveries. Write for full details.

DINGS MAGNETIC SEPARATOR CO.
4750 W. McGough Ave., Milwaukee 14, Wis.
Separation Headquarters Since 1899

Dings
"HIGH INTENSITY"

**Enameling Service
for**



Midwest Manufacturers

CENTRALLY located for service to Midwest manufacturers, DeKalb Enameling is equipped to rush porcelain enameled parts to busy assembly lines.

Our plant is located on U. S. Route 30, and is served by the Northwestern, Milwaukee, and Great Western railway lines.

If your sheet steel products require a lifetime finish, contact us on your next job.

DeKalb Enameling Co., Inc.

QUALITY PORCELAIN ENAMELING

Telephone 2471

204 North 4th St.

DeKalb, Illinois

economic practicability in peace-time markets in any country. But to be implemented, this plan requires cooperation between the oil and gas companies. If the pattern which has already been established in the purchase of natural gas can be extended to the purchase of "coal refinery" gas, then both the gas man and the oil man can join forces in this great development of our fuel resources.

As evidence of good faith in this direction, there are many locations where refineries could produce large quantities of high Btu gas and sell this gas to a distributing gas company during periods of peak loads at a price which would be commensurate with the loss of profit on their normal product sales and at a great saving to the gas distributing company through having large reserves of high Btu gas available for the short periods when peak loads make this supply essential.

**Oil-gas cooperation would
extend house heating service
without large expenditure**

Cooperation at this time will be very helpful in permitting some of our larger companies to materially extend the amounts of house heating service to their customers without the expenditures of large amounts of capital to create peak load production facilities which would be operated for such small amounts of time as are necessitated by the extremes of winter weather. Such cooperation would also give confidence to utility executives so that they could accept these greater house heating loads and so improve their service to the public by cooperation with the oil industry which potentially will provide through enormous coal refinery plants the gas which the industry will distribute in the future.

Adapted for finish from a talk before the Twenty-ninth Annual Convention of the American Gas Association.

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The Toledo Porcelain Enamel Products Co., and a vice president of OCC; Calvin Verity, vice president of American Rolling Mill Company;

and Walter Pfaeffli, president of Strong Manufacturing Company.

**Perfection Stove celebrates
60th anniversary**

Sales promotion and merchandising plans for 1948 were announced in early January to sales representatives of Perfection Stove Company gathered in Cleveland for a 60th anniversary sales convention.

Two announcements include Perfection's entry into the gas appliance field in the near future and a com-

plete new line of oil-burning home heaters. It was announced that ranges and water heaters using natural, manufactured and LP-gas will soon be added to the company's line of cooking and heating devices now fueled with oil.

In its 60th year, Perfection is housed in two plants having 1,263,000 square feet of space. An expansion program now under way at the Ivanhoe plant will increase working space by almost 50%.

Head of the company for the past 25 years has been L. S. Chadwick.

Chicago Vit promotions

According to recent announcement by William Hogenson, president, Chicago Vitreous Enamel Product Co.,



F. L. Meacham has been elected vice president and general manager and M. D. O'Leary has been advanced to works manager and assistant to the vice president.

Meacham (Meach) was formerly manager of sales and service at Chicago Vit, and prior to that was, for 16 years, with Frigidaire Division, General Motors Corporation, where, in 1937, he was appointed manager

of Frigidaire's household engineering division.

Maurice O'Leary has been director of purchases and office manager at



Chicago Vitreous since 1939. He worked his way up through the ranks to his present position, having begun with the company in 1927 as a storekeeper. Before joining Chicago Vit he was with Ford Motor Company at Iron Mountain, Michigan.

It also has been announced that R. L. Stoltz has been appointed director of purchases for Chicago Vit.

**Kaiser-Fleetwings opens permanent
display in The Merchandise Mart**

The addition of the Kaiser-Fleetwings Sales Corporation, makers of dishwashers, as a new tenant in The Merchandise Mart, Chicago, has been announced by Wallace O. Ollman, general manager of the Mart, who said the firm has signed a long-term lease for sales office and display space.

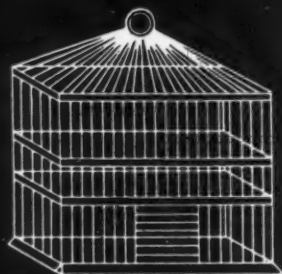
The Kaiser-Fleetwings plant at

Bristol, Pennsylvania, is said to be producing more than a thousand dishwashers each day.

**New York ACS section to hold
joint session with
Canadian Ceramic Society**

At a special joint session of the New York Upstate Ceramic Society and the Canadian Ceramic Society, February 9, at the General Brock Ho-

F O R B E T T E R E N A M E L I N G S E R V I C E



PUT THE BIRD IN THE CAGE

You can do this by placing the edge of a small calling-card on the line, holding the card flat against the nose and relaxing the eyes.

C O N S U L T V I T R E O U S S T E E L P R O D U C T S C O .

We wish we could shut an eye, put up a card and see 100 tons of enameling stock hop into our factory.

Since we can't get all the steel we need, we are forced to allocate our production.

Our old customers say we did a good job for them in 1947, even though they wanted more than we could produce.

What happens in 1948? Your guess is as good as ours. We can only promise to furnish the maximum number of porcelain enameled parts that we can produce.

New customers? Certainly we want them. Right now we must ask them to supply the necessary metal or stampings.

We can form or form and enamel them. We do have excess capacity in these departments. May we quote?

VITREOUS STEEL PRODUCTS CO.

BOX 1791, CLEVELAND 5, OHIO Factory at Nappanee, Ind.

M O R E D U R A B L E E N A M E L E D S U R F A C E S